MODERN TRANSPORT

"THE TIMES" OF THE TRANSPORT WORLD

PROBLEMS OF RURAL TRANSPORT REVIEWED

See Page 3

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CURRENT TOPICS

Pressed Steel Royal Visit

HONOURED last week by the visit of the Duke of Edinburgh to its factories at Swindon and Cowley, Pressed Steel Co., Limited, released details for the first time of its new automatic plant at Stratton St. Margaret, near Swindon, which is designed to produce car bodies at the rate of over two a minute. The occasion marked the fifth anniversary of the start of building operations at Swindon by the company; in those five years the plant has been expanded until it now covers over a million square feet and employs more than 4,000 people. Further extension now planned will increase productive capacity by an additional 75 per cent by 1961. The Swindon factory comprises two self-contained production plants, each with its own toolroom, press shops and assembly shops. High toolroom capacity is a feature of Pressed Steel Company's operations at all of its factories, at Cowley, Linwood and Swindon, and an indication of the company's efficiency in this highly specialised branch of toolmaking is the fact that it is increasingly undertaking the production of press tools and jigs for Continental and American vehicle manufacturers. An additional feature of the second of the two Swindon plants is the high degree of automation introduced into all stages of pressing and assembly, even down to the automatic handling and baling of scrap. The system makes extensive use of electronically controlled transfer and positioning of components between press operations and also of assembly into jigs and welding by multi-electrode welding presses into units and finally into complete body shells. At Cowley, the Duke of Edinburgh saw a demonstration of the Roadrailer, the dual-purpose vehicle developed jointly by Pressed Steel Company and British Railways for operation on road or rail. The Roadrailer was described and illustrated in our issue for January 23 and the historical background to its development in earlier guise appeared in our February 13 issue.

Progress in Bulk Carriers

WITH the lesson having been learned that it pays to employ specially designed ships for bulk sea transport, there is no end yet in sight to the recent spate of orders for bulk carriers. They have accounted for something like 60 per cent of the shipbuilding orders placed during the last few months. Although this activity is cheerful news to the shipbuilder, it is causing a certain amount of gloom around the Baltic Exchange, the world centre of ship chartering operations. Naturally the provision of more bulk carriers to transport such commodities as grain, sugar, cement, fertilisers, phosphate, coal and iron ore will mean less employment for the tramp ships which have for many years carried these types of cargo and consequently less work for those concerned in their operation. There is a growing tendency by large industrial combines to make themselves independent of the vicissitudes of the tramp shipping freight market, by building special carriers to bring in their raw materials. For instance, the British Iron and Steel Corporation has built up a large fleet of modern ore carriers, the sugar refiners their bulk sugar vessels; it is fair to assume that they learned their lesson from the oil companies, which, after all, have been carrying oil in bulk for years. A newcomer on the bulk carrier scene is the chemical firm of Albright and Wilson, Limited, which has recently ordered a 10,000-ton bulk phosphate carrier. No doubt others will follow. Next in line may well be the large flour milling concerns which will add to the ever-growing fleet of grain carriers.

Harrying the Railways

THE Parliamentary game of harrying the railways—not unknown even in pre-grouping days—is in full swing following the settlement of the strike issue, the aftermath of which we discuss on page 2. Ten back-bench Conservative members headed by Sir William Robson-Brown (M.P. for Esher) have set down a motion seeking a full-scale inquiry into every aspect of British Railways. They seek the "appropriate role in the second half of the 20th century of a railway system laid out in the 19th." This was, of course, just what the modernisation reappraisal did. A report in 12 months is demanded. We think Government interest in this matter would be highly acceptable provided the wider issue of the relationships between all forms of inland transport is fairly faced and that the public is prepared to give up obstructing the British Transport Commission at every turn when it has a good case for railway abandonment—the latest is the outcry at closing the trans-Pennine link from Penrith to Barnard Castle.

Foreign "C-Licence" Growth

FIGURES showing that the increase in commercial vehicles operated under a C-licence in this country is matched by a similar development in other countries are published in the current issue of the monthly bulletin of Traders' Road Transport Association. The figures are extracted from the annual *Bulletin of Transport Statistics for Europe, 1958*, a United Nations publication. They show that France, for example, which had a fleet of ancillary users' vehicles numbering 1,061,800 in 1955, possessed 1,331,200 in 1958. Over the same period the West German fleet rose from 505,091 to 529,848, while in Italy the 1955 figure of 330,705 had become 408,755 in 1958. Mr. F. D. FitzGerald, T.R.T.A. national secretary, explains that figures—not complete in every case—are also given for Greece, Ireland, Netherlands, Norway, Portugal, Spain and Sweden. "In each of these countries," he comments, "the same degree of growth in the use of 'transport for own account' is shown." He gives a reminder that the increase in the number of goods vehicles operated in Britain "on own account"—i.e. under C-licences—has been the subject of considerable comment over the years. "The reasons advanced by some," he adds, "coloured as they have been by the conclusions sought to be drawn therefrom, have been challenged by the T.R.T.A. often on the grounds that the alleged reasons are clearly without foundation by reason of similar increases in other countries where such reasons would obviously be invalid. The T.R.T.A. *Survey of C-Licensed Vehicles* has placed the facts beyond dispute. The statistics from these other countries establish that the growth in the number of C vehicles in Britain has been paralleled overseas."

Railways—Hilarity on Television

AN interlude, both interesting and hilarious, came into B.B.C. television's "Panorama" on Monday evening when, under the chairmanship of Mr. Robin Day, three politicians and a transport executive discussed railways before an audience of members of the three railway unions. Mr. Peter Thorneycroft, who regards the 5 per cent interim payment as a Government retreat, said there were two courses open—either "nationalise the railways properly," making a Minister of Railways responsible for them to the House of Commons, or run them as an orthodox commercial enterprise. In the latter event they must be allowed to make what charges they liked and to close all unremunerative lines, a proposal which has obvious limitations. Loud jeers greeted his suggestion that they should get rid of all men who were unnecessary. Sir Richard Nugent, former Parliamentary Secretary, Ministry of Transport, defended the Government's action in averting the threatened strike and fervently supported the financial reconstruction of the railways. Mr. Anthony Wedgwood Benn, Labour M.P. for Bristol South East, averred that the Commission's insolvency was largely due to the break-up of its road haulage organisation and to Government interference with prospective charges increases. He saw no reason why, when millions were being poured out in subsidies to agriculture and privately-owned industry, some should not go to the State-owned railways. Sir John Elliot, speaking not as a politician but as one who had to obey their behests, referred to the "lost" years during which the railways were starved of the capital resources needed for their reconstruction and rehabilitation, and at a time when ample resources were available to their competitors. Subsequently, he and the other members of the panel dealt good-humouredly with a variety of questions, and what might have been a rowdy meeting ended on a note of harmony—if not enthusiasm—when, asked by the chairman to add a few final words, the one-time chief of the Railway Executive exclaimed: "Up the railwaymen!"

LEADING FEATURES IN THIS ISSUE

U.T.A. Coat of Arms

THE new coat of arms of the Ulster Transport Authority comprises, in everyday language, a green shield symbolic of Northern Ireland with a silver diagonal band to indicate a roadway or a railway and three earl's coronets on either side of the band, six in all, to represent the six administrative counties of Londonderry, Antrim, Down, Armagh, Fermanagh and Tyrone, since an earl traditionally ruled a county. The crest—the ornament worn by a knight on his helmet—is a winged horse rearing up, symbolic of transport, and marked with the Ulster red hand on his shoulder. The supporters, or animals holding up the shield, comprise a lion to show the connection with the United Kingdom and an Irish elk to show the local connection; each has a mural crown for a collar to represent the two county boroughs of Belfast and Derry. The motto is "Transportatio cultum significat" or Rudyard Kipling's "transport is civilisation," out of *With the Night Mail*, his story of 2000 A.D. in the volume *Actions and Reactions*, written in 1905. These arms or, to give them their technical description, this achievement are subject to grant by letters patent from the College of Arms under the signatures and seals of the Garter King at Arms and the Norroy and Ulster King at Arms. Shown on page 12, they replace the present emblem.

Ministry and Aircraft Industry

THE Minister of Aviation has been having a busy week with his announcement of general Government policy on aircraft ordering and the first reading of the Civil Aviation (Licensing) Bill. So far as aircraft manufacture is concerned Mr. Sandys has long made it clear that he favoured the consolidation of effort by the grouping of the major concerns and this has now been largely achieved. There are certain businesses still outside but it may well be that they will join later and it may be recalled that the notice of the Bristol-Vickers-English Electric plan referred to an invitation to Hunting Aircraft. The Minister was thus able on Monday to say that, as a general rule, the Government contracts would go to the two airframe manufacturing groups, the two aero-engine groups, and the helicopter group, although the last is really a company with a group of factories. There are those who have questioned the desirability of the mergers under official pressure and have expressed gloomy views about diminished opportunity and lack of competition leading to lethargy. There is, however, a good deal to be said for the view that the British aircraft industry must, if it is to remain competitive in foreign markets, have really adequate financial backing. Furthermore if it is to receive Government support it must make it reasonably easy for selection of projects to be made—a daunting task when about five rival proposals have been put forward. Another benefit should be the strengthening of technical teams with enhancement of the value of their work.

Civil Aviation Reorganisation

THERE have long been indications that the Government was considering methods of affording to British independent air transport operators greater freedom than they possess at the present time. The results are apparent in the Civil Aviation (Licensing) Bill published this week. This has two main objects, one of which is to bring within the coverage of an air operator's certificate those providing charter and other non-scheduled facilities for which authorisation is not needed. This is certainly a most useful step which will be welcomed generally by operators. Nothing is more infuriating than to have a business which is an arduous and not always rewarding one brought into disrepute by some rash practitioner thereof. The actual licensing of services would be carried out by the Air Transport Licensing Board and this would also take over the other functions of the Air Transport Advisory Council as well, of course, as those of a de facto licensing authority. The Bill provides also for the abolition of the special rights of the two airways corporations to routes laid down in the schedules of the 1949 Air Corporations Act and, when it comes to applications, any operator may apply. It will be interesting to see how this works in practice and we do not altogether envy the board. It must, of course, pay the customary regard to the amount of actual and potential traffic on a route and to possible material diversion of traffic from existing operators. It would, however, be possible for an existing operator, while agreeing that traffic was really good and possibly ample also for a parallel operation, to argue that such would reduce its profitability and impair the chances of providing important but unremunerative services elsewhere.

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The Editor is prepared to consider contributions offered for publication in MODERN TRANSPORT, but intending contributors should first study the length and style of articles appearing in the paper and satisfy themselves that the topic with which they propose to deal is relevant to editorial requirements. In controversial subjects relating to all aspects of transport and traffic this newspaper offers a platform for independent comment and debate, its object being to encourage the provision of all forms of transport in the best interests of the community.

The Averted Stoppage—and After

THE railway dispute, settled at the eleventh hour by acceptance of an interim 5 per cent wage increase backdated to January 11, has at least drawn public attention to the problems of the British Transport Commission qua the railways. Would it be too much to hope for realisation by the Press that carping criticism may be one of the main causes of inefficiency and discouragement among railwaymen? The Government can no longer delay coming to grips with the Commission's financial difficulties, to which attention was drawn seven months ago in the White Paper on the reappraisal of modernisation plans. This, of course, is not the first time the Government has stepped in to dictate a railway settlement, and in assessing the treatment to be meted out to the Commission it cannot ignore its responsibility in respect of wages. In the present instance the Ministry of Labour issued a statement to the effect that the chairman of the Commission had "been asked by the Government to make this offer specific." Moreover, it accepted the dictum of the Court of Inquiry, reporting in 1955, that "having willed the end the nation must will the means." Not surprisingly this sentiment has encouraged the railway unions in attempts to justify wages demands and it provided one incentive for initiating the independent inquiry undertaken by the Guillebaud Committee. Incidentally, this small body, which bravely faced a most difficult task, has been subjected to unfair criticism when it should have been commended for a determination to expedite completion of its labours. The settlement so far is estimated at £19 million a year, to which must be added a sum yet unknown in fulfilment of the independent committee's recommendations and possible commitments on working hours.

No Excuse for Leap-frogging

IT is to be hoped that negotiations on the Guillebaud report, which are likely to be intricate and prolonged, will be undertaken in a co-operative spirit without further fratricidal warfare between the unions, and that greater contentment will result, with something like the prewar enthusiasm without which the full benefits of modernisation cannot be secured. To quote Mr. Alfred Robens, "it would be a great pity if public goodwill were dissipated by catastrophic action." It is also to be hoped that the effort to give a square deal to railway workers will not be regarded as an excuse for further wage demands in industry generally; a ministerial warning on the subject might be helpful. True that in threatening a strike the N.U.R. was dishonouring agreements, but there were extenuating circumstances, now well known, which were recognised by both Commission and Government. So in using the word blackmail to describe the dispute, as have some critics, one should remember that it was born of impatience and frustration. Although the settlement does not please the former Chancellor, Mr. Peter Thorneycroft, who in an atmosphere of economic and philosophic detachment completely ignores the human and practical aspects of the problem, both in a letter to *The Times* and on television, few will argue that it was not a just one. In any case, it will have less effect on the country's economy than the recent settlements in the engineering and building industries affecting more than three million and one million workers respectively. It is time to discard the idea that railways must be the whipping boy for wage leap-frogging.

Railways Still Essential

SO much for the labour aspect. In considering the case for the railways the Minister and his advisers will have to determine the contribution they can make to the country's transport in the near and distant future. It is generally agreed, both here and abroad, that railways still have an essential part to play. In this country commuter services alone carry over 1½ million passengers daily; the chaos that can ensue from their partial cessation was clearly demonstrated in the recent 24-hr. strike in the London area. It has been officially computed that a railway can deal with a throughput of at least 20,000 passengers an hour for each track, and a large city terminus may handle over 100,000 people in a busy morning. More profitable are the longer distance passenger services, offering speed and comfort and providing facilities for the carriage of mails, newspapers and perishables, not to mention the increasingly popular car-sleeper trains. For freight the railways can offer the most economical form of transport and, given closer working arrangements with the road hauliers for long-distance traffic, coupled with the use of roadrailer equipment, their potentialities are considerable. They are indeed indispensable to the great volume of the basic freight traffics and their value to national defence cannot be overlooked. Their fortunes, on the other hand, must also be measured in the light of the decline in coal traffic and of technological developments in pipelines, helicopters and air-cushion machines.

Capital Should be Written Down

BUT however one looks at the transport problem, which must now be faced by all interests with mutual confidence and co-operation, there is undoubtedly wide scope for the railways in this tight little island where an indefinite spread of main road development to cater for the volume of traffic must be particularly costly, and damaging also to our limited agricultural capacity, to say nothing of rural amenities. A way must be found to enable the Commission to run a necessarily contracted railway system as a business concern with the prospect of earning revenue sufficient to keep pace with necessary maintenance and improvements while meeting a reasonable wages bill. Some of the means to this end, reputed to be under consideration in Government circles, we reviewed last week; none of them passes muster. The most obvious and practicable course would be a drastic writing down of capital, for which there is ample justification. Under the Act of 1947 the Commission had to take over the railways at a value inflated in relation to prospective earning power. Capital investment on much-needed improvements between the wars had been restricted owing to successive trade recessions and growing competition against which the railways had to use an out-dated charges system; in performing unprecedented war service the railways had been further run down, and much-needed rehabilitation was unduly delayed in the postwar years by Government intransigence; indeed, modernisation was not begun before an immense volume of traffic had been attracted to the roads. In a letter to *The Times* Mr. G. J. Ponsonby draws attention to the two main forms of railway investment: the first in "wasting" assets—rolling stock, rails, signalling equipment, etc.—needed for maintaining profitable service, and the second in expenditure on purchase of land, tunnelling, excavating cuttings, etc., which may never be incurred again. Most of the latter, of course, represents the Commission's heritage from the past, of which it might well be relieved without the odium of being subsidised—a predicament which everyone concerned is anxious to avoid. The point is well worth consideration.

NEWS SUMMARY

STRIKE notices were withdrawn by the National Union of Railwaymen on February 12 after meetings between Sir Brian Robertson, chairman of the British Transport Commission, and representatives of the three railway unions under the chairmanship of the Minister of Labour, Mr. E. Heath. On February 8, the chairman of the Commission undertook, within one week of receipt of the report of the independent pay committee, to make an offer of an interim increase in pay for all staff covered by the report and to backdate it to January 11, 1960. Last Friday he was asked by the Government to make that offer specific. After the fullest consideration of all the circumstances, particularly the acute shortage of staff on important sections of British Railways, the figure of 5 per cent was offered and was accepted by all parties. Mr. C. W. Guillebaud confirms that this offer is containable within the findings of the independent pay committee. The specific offer does not prejudice discussion on the conclusions of the report.

Sir Ronald Peter Morison, Q.C., succeeds Lord Forster of Harraby as chairman of the Railway Staff National Tribunal.

We regret to have to announce the death on February 13 of Mr. R. Morton Mitchell, chief executive officer, Road Haulage Association. A portrait and biography appear on page 9.

The text of the Civil Aviation (Licensing) Bill has been issued; introduced in the House of Commons on February 15, it provides for the setting up of an Air Transport Licensing Board which will also assume the functions of the Air Transport Advisory Council. The Aviation Minister has announced Government support for promising commercial aircraft and aero engine projects.

On February 22, Sir Edward Boyle, Bart., M.P. for Handsworth, Financial Secretary to the Treasury, will inaugurate a data processing bureau in Birmingham for International Computers and Tabulators, Limited. This I.C.T. Bureau will be available to commercial, industrial, scientific and academic organisations for the solution of those accounting and other problems which justify the use of electronic techniques.

THE PROBLEM OF RURAL TRANSPORT

I—Analysis in Devon

By DAVID ST. JOHN THOMAS

THE problem of providing rural areas with adequate public transport services is not new, but during the last few years it has changed. Until the 1939-45 war, a serious shortage or complete absence of services was generally confined to the areas of thinnest population, and regrettable though conditions may have been in those areas, the national economy as a whole was little hurt.

In any case the lack of suitable roads or the impossibility of finding sufficient patronage for a bus meant that often there was nothing that could even be considered to help isolated settlements, whose difficulties therefore had to be taken for granted.

But, particularly since 1950, the problem has ceased to be a local one concerning only a few isolated areas. It now affects, or soon will, nearly the whole countryside to a greater or lesser extent. Widespread inconvenience and hardship is being caused, and the rural economy, whose health many people regard as fundamental to the health of Britain as a whole, is steadily being weakened. Increasing comment would be stirred even if this state of affairs were inevitable, but there is a strong feeling in many quarters that at least part of the trouble could be avoided by Government help or other means.

In December, 1958, Dartington Trustees, of the rural research institute at Dartington Hall, near Totnes, in Devon, commissioned the writer to undertake research and contribute a book on rural transport to the Dartington Hall "Studies in Rural Sociology" series, published by Routledge and Kegan Paul. Shortly after the research had begun, the Government appointed the Committee on Rural Bus Services, headed by Professor D. T. Jack. The work commissioned by the Dartington Trustees cannot be completed in time for presentation to the Committee, but a booklet summarising the interim findings is shortly to be presented in evidence. In these articles the writer first publishes some of the facts and views obtained during his inquiry. The opinions are entirely his own

Stages of Inconvenience

Severe inconvenience still exists in the really isolated, mainly mountainous, parts of Britain, but the condition of such areas—many of which have lost further population—has to be taken for granted even more today than it was before 1939. Present concern is generally limited to the places and areas which used to support a railway or bus service and which have either lost it or had it reduced. As far as can be generalised, it seems that a village passes through three distinct phases or crises between having satisfactory public transport and having none at all.

The first crisis comes when the train or bus timetable no longer provides a service sufficient to meet virtually all needs. The requirements vary radically from place to place, even from village to village. In more prosperous country districts fairly near a town, more than an average number of people seem to begin buying cars and motor bicycles if their road is served by anything less than a bus an hour, while rather deeper in the countryside in many areas six to nine daily buses keep a large proportion of the population contentedly dependent on public transport. In mid-Northumberland, where a special survey was made, requirements are generally more modest; here discontent rises sharply when there cease to be a minimum of four well-spaced daily journeys each way.

A Rake's Progress

Obviously fewer daily services to the nearest town are required the longer the journey becomes, and the more strictly agricultural the population to be served. When the timetable falls below the minimum level at which it meets nearly all needs (work, shopping, hospital visiting, cinema trips—the latter perhaps on certain days only), not only do more people buy motor vehicles, but others seek lifts or make greater use of shops' deliveries. The most serious crisis results from the withdrawal of the daily bus or train which takes people into the nearest town to work. Girls are usually the most inconvenienced, there being more country work for males, and men anyway being readier to provide their own transport. Daughters frequently leave home when unable to travel daily to work, and sometimes the rest of the family follows. The loss of the girls is one of the key factors in rural depopulation.

The third or final crisis comes when a village is entirely removed from the bus map. A village with a bus only once or twice a week has some link with civilisation, and when this goes the psychological effect may be more serious than the practical one. People living in villages on the verge of each of these crises were interviewed during the survey, and one conclusion was that transport undertakings could help themselves and the public by recognising the stages more clearly and maintaining services at one or other level as a definite policy.

Devon Investigations

All investigations support what has of course always been assumed: that when people buy a car for one purpose they use it for nearly every purpose. However, there was significant evidence that the motorist is more likely to desert his car to go by train than by bus, particularly for the daily journey to work. This evidence led to an inquiry into what happens when a branch railway is closed. From both the general inquiries in England and Wales, and from detailed investigations concerning two Devon branch lines—Newton Abbot—Heathfield—Moretonhampstead and the associated Teign Valley line from Heathfield to Exeter—it would seem that when a rural train service is withdrawn, often only a small part of its passenger business is transferred to bus.

For the detailed Devon investigations, lists of adult passengers were collected on the train and everybody on the list still living in the district was interviewed later. In the case of the Moretonhampstead line, 166 people were interviewed at home nine months after closure, when only 71 of them were making their journeys as frequently as they had done by train. Of the total, 120 made some use of the alternative bus services, but only 49 travelled by bus as much as they had by train, and of these 29 did so daily to reach their work. But these 29 going daily by bus compared with 55 who had done so by train. The others worked on fewer days a week, had changed or lost their jobs, bought cars or went in other people's cars. No fewer than 72 people stated that they had been unable to make their usual visits to the seaside in 1959, yet only 43 claimed that the closure had caused them "great inconvenience"; 71 said it had caused "some inconvenience" and the rest "no real inconvenience."

But 88 said that as the result of the closure they did less travelling by public transport outside the Newton Abbot—Moretonhampstead area, which would seem to emphasise the elasticity of demand for public transport. The inquiry also emphasised that once broken of a weekly shopping habit, women may become most irregular travellers—even if, as at Moretonhampstead, they do not grumble of hardship. It should, of course, be stressed that this was purely a survey of former railway users, mostly living beyond Bovey Tracey, and that the bus service was running, though to a more limited extent than now, when the railway was open.

Of 90 adult former users of the Teign Valley branch, 51 still travelled as often by road as they had done by train, but only about half of these went by the new bus services which had replaced the trains. Out of the 32 former daily train travellers, eight immediately bought motor vehicles, two arranged lifts and five lost their jobs. The Teign Valley is an unusually self-contained unit, but 26 people said they did less travelling outside it as the result of the closure. Two Teign Valley villages, Ashton and Trusham, together formed one of two areas where particularly detailed general interviewing of every one over the age of 15 was carried out. There were 261 people in the Ashton-Trusham survey, and 253 in that based on Birtley near Wark, on the North Tyne in Northumberland.

Private Does Not Replace Public Transport

The chief conclusion was that many years have yet to elapse before car and motor bicycle ownership will be widespread enough for the economy of even a small village to remain healthy and well-balanced without some public transport. Though over one-third of the adult population of Ashton-Trusham now own a motor vehicle, great hardship and depopulation would follow the withdrawal of the bus which has replaced the Teign Valley Railway. Many of the vehicles there already are owned at considerable financial strain; 13 people complained that they had had to buy a vehicle within the last year against their real choice entirely as the result of deteriorating public transport. Of 261 people over the age of 15 in Ashton-Trusham, 70 owned cars, 27 a motor bicycle (plus another five among the car owners), 81 had no personal motor transport but lived in a family with a car, and 83 lived in a family without a car. Of the 253 people at Birtley, 47 had a car, seven a motor bicycle, 63 non-owners of motor transport lived in a car-owning family, and 125 lived in a family without a car.

Taking the two survey areas together, 145 people—mainly women—did not own a car but lived in a family where a car was owned. Of these 145, only 26 held a licence to drive the vehicle, and the remaining 119 travelled by bus virtually as often as those in non-car families. Journeys in the husband's car with the husband as driver were mainly at weekends or on summer evenings, and were in addition to routine shopping and "getting away from it" expeditions. Even in the younger age groups, less than half the wives drove their husband's car. In some cases where the wife did drive, she was allowed only occasional use of it, the husband either taking it away with him to work or demanding that it should remain available on the premises. General inquiries as well as those in Ashton-Trusham and Birtley confirmed this; it seems that in most cases only when wives have their own personal car will they be able to cease keeping a bus timetable.

Lifts

Another general finding supported by Ashton-Trusham and Birtley interviewing, though there were only a few relevant cases, is that even where the husband is willing for his car to be used without him, women of other than the landowning and professional classes are reluctant to drive, so that paradoxically some who can drive are unable to use the vehicle and others who could use it are unable to drive. But if they are reluctant to drive, Ashton-Trusham and Birtley women would also seem typical in their readiness to accept lifts. In Ashton-Trusham it was estimated that half the women who thought they would go by bus, or were at least prepared to do so if necessary, were given lifts. Inquiries about the way lifts, regular and casual, are arranged showed that many of them depended on there being a bus service. Without a bus stopping place where they could display the fact that they were waiting to go, many housewives who in fact hardly ever travel by bus would be so uncertain of reaching their destination that they would not set out at all. Eagerly though lifts are accepted, there is reluctance to appear to be deliberately seeking them and dread of having to rely upon them. Nearly all the women who do drive, however, feel it almost their duty to give lifts, many of them arranged in advance, so that a relatively small increase in the number of women owning cars could lead to a big loss of bus traffic.

In the survey villages, bicycles and motor bicycles are generally owned for a specific purpose, and with the exception of unmarried young motor bicyclists most of their owners depend on public transport for some journeys. There were only seven motor bicycle owners in the Birtley area, where the weather discourages this form of transport, and all but one of these sometimes, if not regularly, went by bus to Hexham.

Farm Staff Crisis

Poor public transport was found to have contributed to, if not entirely caused, a staff crisis worrying a small number of farmers: others had been forced to mechanise or cut production. The problem is almost universally that of persuading

(*Continued on page 5*)

LORRY—BUS—COACH

Huddersfield-Llandudno Coach Fight

EVIDENCE that Hanson's Buses, Limited, turned away hundreds of people wanting to travel to North Wales, every year, because its present coach allowance and period of operation were manifestly absurd was referred to in the Leeds traffic court last week. It was alleged that Hanson had never been able to offer seats for the picking-up-points en route. Mr. J. Evans, for the company, sought to extend the operating period to all Saturdays from June to September, and increase the vehicle allowance from one to 10 on each departure in July and August, and to two in June and September. The application was opposed by British Railways, West Yorkshire Road Car, United Automobile Services, Yorkshire Woollen District Transport, Lancashire United Transport, North Western Road Car and Northern General Transport. He said the service was first licensed in 1948 for the two weeks of Huddersfield textile and engineering holidays, and extensions were refused in 1951 and 1954. By the end of the first week in February, 1960, they had received 156 inquiries for bookings from Huddersfield alone. Hanson's were the only company licensed direct to Llandudno from Huddersfield, and contended this was their traffic. The Liverpool—Newcastle pool companies were only licensed to run as far as Manchester where they linked for through journeys with the North Wales services of North Western. They were not entitled to protection so far as North Wales passengers were concerned.

Mr. W. Woolley, assistant traffic manager of North Western Road Car, said in evidence that there had been regular through operation by linking since 1951. At the recent renewals of the pool licences before the North Western and Yorkshire Traffic Commissioners, linking was not interfered with, although conditions were imposed banning the advertising of certain through timings. The question had been gone into following the North Western Traffic Commissioners suggestion that all linking ought to be disclosed. He submitted that if the Commissioners accepted the contention that linked services were not entitled to protection, his clients, although operating a perfectly lawful and authorised service, would be unable to object to any new applicant. The application was refused.

Stockton Corporation Transport uses an Austin Omnicoach with Perkins Four 99 engine to take crews to changeover points and for very early and late starts and finishes; right, one of five Dennis Paravans for N. Francis and Co., Limited, the London parcel carrier. The cab is enclosed by a flush-fitting sliding door

Municipal Bus Wage Claim

AFTER discussing the claim of 58,000 municipal bus workers for a "substantial" wage increase for seven hours the National Joint Council for Road Passenger Transport referred the issue to its wages committee. The committee will meet again on February 24 and 25.

Dispute over Birmingham 40-Hour Week

BIRMINGHAM City Transport bus crews voted against acceptance of the Transport Committee's offer of a 40-hour week without loss of pay. As the increased cost to the undertaking would be about £200,000 a year, the Corporation asked the staff to agree to the cutting-down of layover and walking time so as to effect economies.

City Parcels Service Going

OWING to a decline in custom, Edinburgh Transport Department has decided to discontinue the parcels service which Leith took in 1904 from the Edinburgh and District Tramways Company. There are four parcels vans and receipts in 1958-59 were £2,213 from 77,944 parcels delivered. The rates are: 6d. up to 14 lb. and 9d. up to 28 lb. and there is an interworking agreement with Scottish Omnibuses, Limited.

"Go By Bus" Posters

AS part of a publicity campaign designed to arrest the decline in revenue due to the increase in the use of private cars and television, Liverpool Transport is utilising 150 lower rear panels on its buses for publicity purposes, where they will be seen by following car drivers. Four attractive posters have been designed to read as follows: "Traffic congestion, full car parks, worries drivers. Why not go by bus?"; "No parking problems when you go by bus"; "It's still quite cheap to go by bus"; and "Shopping is so easy when you go by bus."

Details of Brighton Agreement

THE new pooling scheme for bus services in the five towns of Brighton, Hove, Portslade, Southwick and Shoreham was to be laid before the meeting of Brighton Town Council on February 18 for approval. The scheme, it is now indicated, provides for a tripartite agreement between Brighton Corporation, the Brighton, Hove and District Omnibus Co., Limited, and Southdown Motor Services, Limited, which will supersede the 22-year-old agreement between the Corporation and Brighton, Hove and District company. It is hoped that the new agreement will be ready in a year.

The pool will be administered by a joint advisory committee of nine—three representatives from each of the operators. Revenue from the pooled stage services will be shared in proportion to the service provided by each party. Routes will be redistributed among the undertakings so that each will operate a fair share of the more difficult routes. Brighton, Hove and District will receive 50·5 per cent of the pool and run 50·5 per cent of the buses in the five towns area. Southdown will take 29 per cent, and Brighton Corporation 20·5 per cent.

The fact that nearly half of the Southdown mileage is covered on routes which run well out of the agreement area and may involve some difficulty in fairly re-allocating the local routes has been foreseen. The three parties to the agreement believe they can lop nearly half a million miles off the current total annual mileage (12,900,000) without impairing efficiency by withdrawing or reducing duplicated services, and by working over more direct routes. It is not intended to pool receipts from advertisements on buses, nor from the carriage of parcels.

Cheaper Continental Tours Granted

A RESERVED decision of the South Wales area Traffic Commissioners has brought a second operator in that area into the field of Continental coach tours. Continental Tours Agency has been granted a licence to provide a group of six Continental tours starting from Cardiff, the journeys to be made throughout by coach. British Railways opposed the application. So did South Wales Transport, which operates Continental tours by coach throughout from Swansea with picking-up points at Neath, Port Talbot, Bridgend, Cardiff, St. Mellons, Newport and Chepstow in this traffic area. The applicant's case was that they should be authorised to provide facilities for people who wished to visit the Continent and travel throughout by coach but could not afford to take advantage of existing tours. It was not suggested that S.W.T. charges were too high, but the applicants claimed that by providing cheaper but nevertheless good hotel accommodation, attractive tours could be offered at charges substantially lower. The maximum vehicle allowance on any one tour is to be one, and on the group of tours, two at any one time. Under section 20 of the Public Service Vehicles (Licences and Certificates) Regulations, 1952, it will be necessary for the applicant to apply to the Commissioners for permission to hire public service vehicles to be used under this road service licence.

L.T.E. to Investigate Two-Door Buses

THREE one-man-operated 30 ft. by 8 ft. A.E.C. Reliance buses with Willowbrook bodies incorporating separate entrance and exit doors have been ordered for experiments by London Transport. They will be tried on suitable Country bus area routes. The doors are at the front (for entrance) and the centre (for exit), both being power-operated. Vehicles with Willowbrook bodies of this type are at present in use by the Grimsby and Cleethorpes Joint Transport Committee and other provincial operators. The London Transport vehicles will be 42-seaters. Delivery is expected in five months.

Dundee Turns the Other Cheek

RECENT criticisms over the transport of meat in Dundee left the last meeting of the Corporation Health Committee unmoved. The withdrawal of a closed meat van service had been described as a "retrograde step" by the deputy Scottish area Licensing Authority, Mr. Alex Robertson. Mr. W. K. Fitzgerald, a member of the committee and also a member of the Master Butchers' Association, said it had been thought best to ignore ill-advised criticism in Parliament and elsewhere. Mr. Charles Buick, convenor of the committee, admitted that the standard they had asked from the operators of the substitute service (which uses tarpaulin covered open vehicles) was the minimum standard they would permit, but said it was the best standard applied in Scotland.

East Kilbride Appeals

THE Minister of Transport has given his decision on a series of appeals lodged by J. Laurie and Company, Hamilton, against the decision of the Scottish area Traffic Commissioners refusing a road service licence for a stage service between East Kilbride and Eaglesham and granting five services from East Kilbride to Central S.M.T. He has decided to make no order on the Commissioners. On the merits of the rival applications, by Central S.M.T. Co., Limited, the evidence indicates that the grant to the respondents was likely not only to meet this need more satisfactorily than the appellant's proposals but to entail no serious abstraction from the appellant's services: whereas a grant to the appellant would have caused an undesirable degree of abstraction from the existing services of the respondents.

Bus and Coach Developments

United Counties Omnibus Co., Limited, applies for licences previously held by G. Woolston and Sons, Keysoe.

J. Dodds, Lesmahagow, seeks the licences of J. Yuille, Larkhall.

J. O. Andrew, Limited, Sheffield, applies for the excursions and tours from Walkley, Sheffield, of H. Jackson.

Berridge and Sons (Garage), Limited, Warminster, and Wilts and Dorset Motor Services, Limited, propose interavailability of return tickets on leave services from Knook and Warminster camps.

Potteries Motor Traction Co., Limited, applies for new licences and modifications to incorporate the services of C. M. Dawson (Reliance Bus Services), Bucknall.

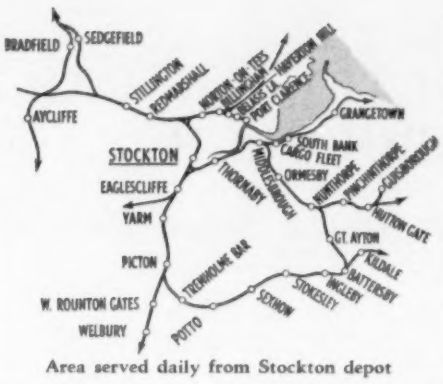
Bonas and Son, Limited, Allesley, applies for the licences of Grove Coaches (Coventry), Limited.

NEW TEES-SIDE FREIGHT DEPOT

Facilities Improved

SINCE the days of the horse-drawn dray the number of railway freight depots handling smalls traffic—or consignments of less than 1 ton—has greatly diminished. Motor vehicles operating over extended areas from the railhead have made this possible, and already on what is now the North Eastern Region of British Railways, the number of such depots has been reduced from 1,000 to under 100. Apart from the obvious economy of closing redundant depots the concentration of this work in fewer and larger depots has operating advantages that benefit both the railway and its customers. It enables wagon loads for a given destination to be made up to an economic level, thereby eliminating the need for transhipment and reducing the journey time to an absolute minimum, and secondly it provides sufficient utilisation to justify equipping depots with efficient mechanical handling facilities.

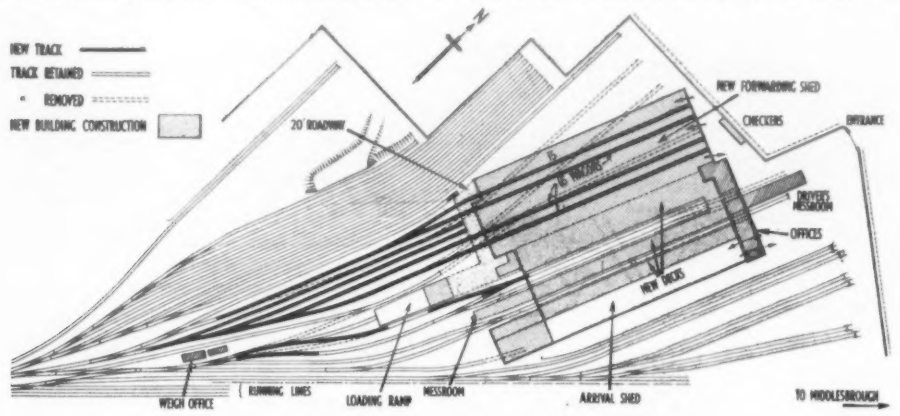
Quite simply the aim of the scheme now being implemented on all regions of British Railways is to provide a speedy up-to-date service for the conveyance of almost anything weighing less than a ton between any two points in the British Isles, and



Area served daily from Stockton depot

structed and surfaced in tarmacadam and concrete to provide good surfaces for this mobile mechanical equipment. A fixed connecting platform has been installed at the terminal end of the shed, whilst the east side and middle platforms are connected by a counter-balanced lifting bridge located centrally in the shed. This bridge is raised when required to permit the free passage of wagons on the road it spans, and replaces the old practice of using the drop sides of a wagon for the same purpose.

For outgoing traffic a completely new shed has been built on the west side of the old shed. This consists of reinforced concrete columns supporting pre-stressed concrete roof beams and steel stanchions with steel beams and cantilevers. The side walls are of brickwork up to 6 ft. with glazing above, and this, together with a 60 per cent glazed roofing, provides excellent natural lighting throughout the interior.



Layout of new North Eastern Region depot at Stockton

with the exception of the parcels post service of the G.P.O., which imposes a limit of 15 lb., no other organisation offers anything comparable to this nationwide facility.

Stockton a Zonal Centre

As part of its contribution to this overall scheme the North Eastern Region has planned to concentrate the whole of this type of traffic in 29 freight terminals, seven of which (including Stockton) will be main centres. Of these seven main terminals the first to be remodelled was at York last year, and the second at Stockton this month. Under the present scheme Stockton is the zonal centre for Tees-side with railheads at Redcar, Loftus, West Hartlepool, Heighington, Darlington, Bishop Auckland, Richmond and Barnard Castle. Daily services by road will cover Middlesbrough, Tees-side, and an area bounded by Eaglescliffe, Yarm, Stokesley, Guisborough, Grangetown, Billingham and Sedgefield.

Advantage has been taken to operate the collection and delivery services in Middlesbrough direct from Stockton, as the distance is only about four miles; this procedure will save time and handling. Already the depot provides direct loading daily between Stockton and 47 other centres. Most of the southbound traffic leaves on a fully fitted express freight for York at 6.45 p.m. daily. The wagons are then transferred to the numerous fast freights that leave there in the late evening, and in this way reach destinations as far distant as Cardiff the following morning. It is the aim to improve and extend this service until the whole country is covered. Currently the smalls traffic handled by the depot amounts to 160 wagons inwards, and 120 outwards daily, with an average wagon load of 2½ tons.

£125,000 Reconstruction

In order to cope with this considerable influx of traffic it has been necessary to reconstruct and enlarge the existing premises on a scale that has more than doubled the former handling capacity. The old goods depot had only a single transit shed served by three roads, with covered accommodation for only 39 wagons. It was built 85 years ago to serve the town and its immediate suburbs, and although in recent years the inadequate facilities had necessitated some improvements, the layout remained basically the same as in the 1870s.

However, like many similar buildings of the period, the old shed had the merit of a substantial and thoroughly sound construction, that could with certain innovations be adapted to meet all requirements for many years to come. It has therefore been modernised for use exclusively for incoming traffic. The manual system of handling has been replaced and 10 electric trucks, seven with fixed and three with elevated platforms, have taken over from the hand barrows. These trucks are used in conjunction with stillages which when loaded are conveyed by the electric trucks to the road delivery vehicles. For the movement of heavier consignments there is a 1-ton electric mobile crane.

The three loading platforms have been reconstructed and surfaced in tarmacadam and concrete to provide good surfaces for this mobile mechanical equipment. A fixed connecting platform has been installed at the terminal end of the shed, whilst the east side and middle platforms are connected by a counter-balanced lifting bridge located centrally in the shed. This bridge is raised when required to permit the free passage of wagons on the road it spans, and replaces the old practice of using the drop sides of a wagon for the same purpose.

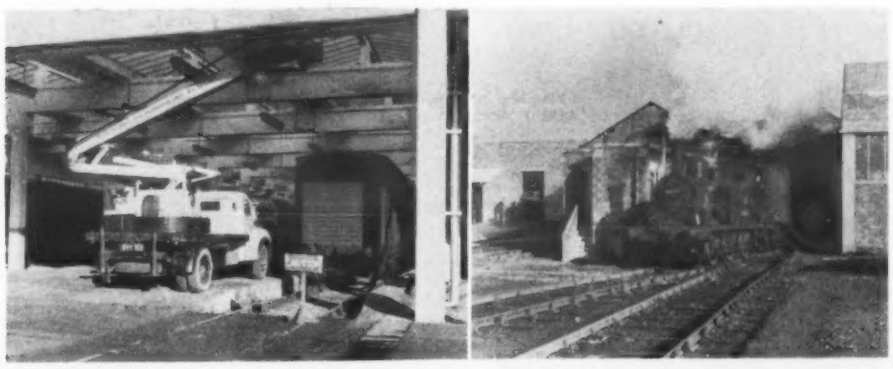
For outgoing traffic a completely new shed has been built on the west side of the old shed. This consists of reinforced concrete columns supporting pre-stressed concrete roof beams and steel stanchions with steel beams and cantilevers. The side walls are of brickwork up to 6 ft. with glazing above, and this, together with a 60 per cent glazed roofing, provides excellent natural lighting throughout the interior.

Freedom of Movement

By virtue of the new shed abutting the old, it has been possible to support part of the old roof on the new construction, and so remove the old shed wall on the west side. This eliminates the previous restriction on the free movement of vehicles alongside the loading platform. The provision of ramps and rail level crossings at the outward end of the shed further enables vehicles to make unrestricted movements. The new shed covers 60,000 sq. ft. and has three roadways serving four rail tracks on which 63 wagons can be loaded simultaneously. Road access is given at both ends of the shed, and traffic by the incoming road vehicles is taken direct to rail wagons for unloading. A fork-lift truck with crane attachment has been provided for traffic stowed on pallets and also for heavier lifts.

Amenities

Offices, messrooms, lavatory and washing amenities have been modernised and extended, whilst at the same time conditions in the working area have been greatly improved by the installation of a new heating system and a generous amount of strip lighting. As a further aid to vision the interior roof structure has been painted white in order to reflect a maximum amount of light downwards. For speed and efficiency in dispatch work adequate lighting is of critical importance since the loading of the vehicles is done by tally numbers chalked on the sides of the wagons and read off the consignments as the vehicle circulates around the loading area.



Finishing interior paintwork with Morris Commercial mounted Petter hydraulic hoist; right, J72 0-6-0 tank removing a raft of wagons from the main goods shed at Stockton

RURAL TRANSPORT

(*Continued from page 3*)

the farm worker's wife to come or remain in a district with poor public transport. The suggestion that labourers with motor bicycles might live in a more populous place and come to work daily meets little enthusiasm. Farmers not only state that the man is needed to live on the farm, where a cottage may be available, but are afraid that urban living will, perhaps of economic necessity, lead to urban employment.

By far the largest number of people who mentioned a particular transport worry were concerned about reaching the doctor—22 per cent of the total. About 12 per cent complained of the difficulty of reaching main-line trains, and about 11 per cent of the difficulty of seeing friends. Few found difficulty in obtaining provisions, but many complained of lack of choice and high prices charged by local shops—and particularly by travelling shops. School transport worried hardly anybody, though one of the most popular requests was that when space was available ordinary passengers should be carried on the school bus.

MODERNISATION AT WORK—1

REMODELLING AND RECONSTRUCTION OF RAILWAY FACILITIES AT PETERBOROUGH

Relieving Notorious Eastern Region Speed Restriction

RAILWAY facilities at Peterborough are basically more than a century old; much of the layout and many of the facilities date from the middle and later years of the last century. These features are, therefore, quite unsuited to the demands of a growing town for a modern railway service. It is well known that the need for improving the passenger station and eliminating the restrictive curves of the main line has been considered for many years and a start was, in fact, made in 1913 when the notorious level crossing was replaced by the Crescent bridge.

But not until now has it been possible to bring together all the problems which require solution and comprehensive plans to provide Peterborough with the most up-to-date aggregation of railway installations in the country, at an estimated cost of more than £5¼ million, have been prepared by the Eastern Region. Opportunity has been taken to explain the plans as a whole to the local authorities and the public in Peterborough. The proposals fall into two main groups—route modernisation and reconstruction of buildings.

Route Modernisation

The running facilities from the point at which the lines cross the River Nene to Werrington Junction are inadequate. There is a permanent speed restriction of 20 m.p.h. through the station and all up passenger and freight trains calling at Peterborough have to be routed over one track. To meet future needs it is proposed to realign the main running lines, abolish the existing reverse curves and raise the speed limit to 85 m.p.h.; to provide four tracks (two up and two down) between Werrington Junction and Nene sidings for main-line running; to rearrange the tracks so as to provide up lines side by side on the east side and down lines likewise on the west side. By this means, trains will be able to cross from the fast to the slow lines in each direction, and vice versa, without interfering with each other.

Further to this, the running connections between the ex-L.M.R. Stamford line and the East Coast main line between the Nene bridges and Werrington Junction will be improved. This will make additional tracks available, in each direction, to both Stamford and main-line trains through the North station and its approaches. Werrington Junction will be remodelled in conformity with the rearranged track layout.

Improved Platform Capacity

At present, main-line trains can use only three platform faces at Peterborough North; these vary in length between 720 and 880 ft. This causes difficulties with the present weekday service and leads to heavy delays at peak periods. In the new layout, it is proposed to provide three island platforms giving six platform faces varying between 1,075 and 1,290 ft. in length. Bay platforms will also be provided. The new arrangement will enable non-stop expresses to pass through the area without interfering with the movement of stopping trains. It will also provide cross-platform interchange for passengers. A seventh line will service a parcels depot and a postal sorting office, thus separating parcels and mails traffics from passenger movements, which will greatly facilitate the working and improve the comfort and convenience of the travelling public.

Reconstruction of Installations

All lines between the Nene bridges and Werrington Junction will be resignalled as part of the route modernisation. It is intended that all main-line movements between Werrington Junction and Fletton, just over a mile south of Peterborough, will be controlled from one box near the new station.

All passenger trains serving Peterborough will use the new North station and through trains between East Anglia and the Midlands, coming into the Peterborough area from March, will be rerouted via Stamford and Seaton Junction en route to Market Harborough and beyond. It is proposed to reconstruct the station buildings at the North station mainly in the form of a wide overbridge, spanning the tracks and platforms. In the existing station, waiting-rooms and refreshment-rooms are provided on individual platforms.

Concentration of these buildings on a wide overbridge will enable facilities of a high standard to be planned in a convenient location. A modern parcels office and separate parcels platform will be provided. The parcels platform and subways will be linked with a new postal sorting office which the G.P.O. proposes to build adjacent to the parcels depot.

Marshalling Yards

The present method of sorting wagons in the numerous small existing yards is expensive in signalling, locomotive power and shunting staff, and the amount of inter-yard transfer delays goods in transit. At present, all down freight trains calling at Peterborough have to cross the up line to enter the marshalling yard and to cross the up line again when leaving. This leads to interruptions which will not be tolerable when more frequent express services are running. It is, therefore, necessary to construct a new marshalling yard on the down side and to remodel the straggling collection of yards on the up side into one new up yard.

Arrival and departure of trains in the new yards will be controlled from the new signalbox. To provide a compact down yard, it is proposed to sever the Peterborough end of the former Midland and Great Northern Joint line at a point west of Dogsthorpe and to remove the existing flyover over the East Coast main line. By providing a new curve at Murrow, the remaining length of the M. and G.N. line (which is now used only for local freight traffic) can be connected to the line from Lincoln to March and be better served from Whitemoor marshalling yard.

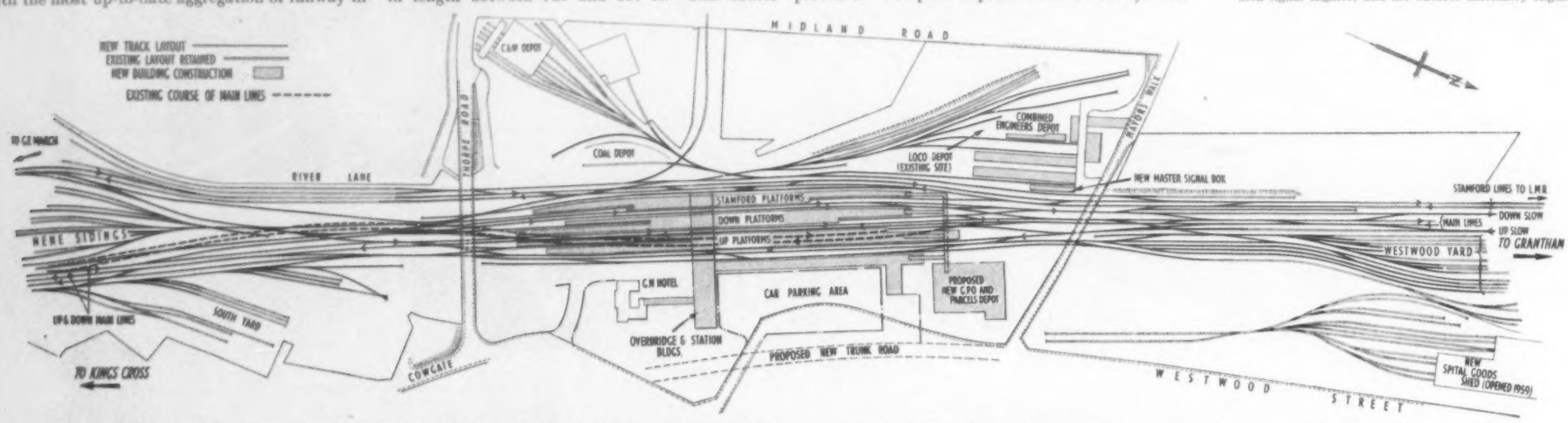
Engineering Maintenance Depots

The present sites of the district engineer's workshops are required for the northern end of the new North station buildings, the parcels depot and the postal sorting office. The new plans provide for the construction of:

(*a*) a combined workshop and stores for the district engineer, area signal engineer and the outdoor machinery engineer's staff on the site of Spital motive power depot, which will be closed;

(*b*) a permanent way depot on the site of Bridge sidings at Peterborough East.

The carriage and wagon repair work is now carried out at four different locations and the long-term plan is to rationalise this work in a workshop which will occupy part of the site of the existing motive power depot at New England. This will not be possible until steam traction is withdrawn and temporary arrangements will be made during the interim period to deal with repair work now done at the Peterborough North and Peterborough East workshops, both of which require to be removed for the reconstruction work. The plans will thus provide modern and compact engineering maintenance facilities. On the Spital site, there will be adequate storage space and sufficient room will be available for an overhead line maintenance depot and control room to be constructed in connection with the ultimate electrification of the Great Northern main line. The permanent way depot at Bridge sidings will be mainly for storage of materials and the prefabrication of track components.



Proposed layout of the Eastern Region station at Peterborough North after realignment (the present route of main-line trains, subject to a 20-m.p.h. speed restriction, is shown in broken line), reconstruction of station buildings, postal and parcels facilities and relocation of engineering depots

Modernisation at Work—2

TYPE 3 1,550-H.P. DIESEL-ELECTRIC LOCOMOTIVES

For Southern Region Kent Electrified Area

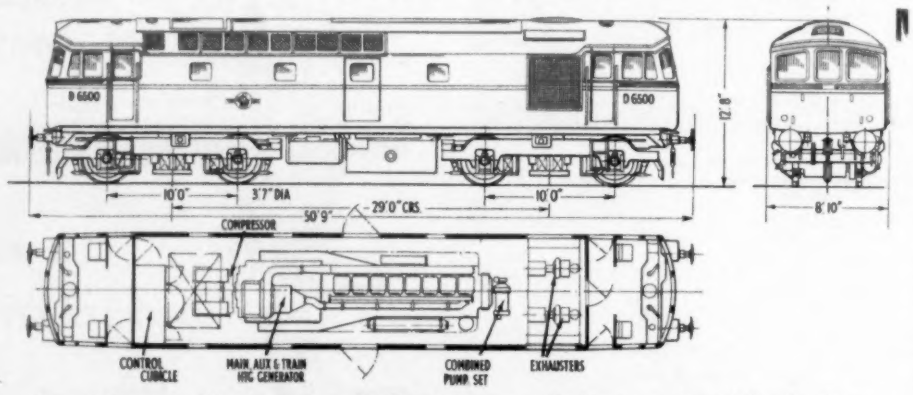
FIRST phase of the Kent Coast electrification scheme of the Southern Region of British Railways was opened in June last. Elimination of steam power in Kent and Sussex is provided for by electrifying as many services as possible and using diesel locomotives for the remainder. So far only 15 Type 2 diesel-electric locomotives borrowed from the London Midland Region have been available pending completion of the locomotives specified for the scheme. A total of 98 is required for the whole area. The first of the Type 3 diesel-electric locomotives for the Southern Region has now been delivered and is numbered D6500. Although they will work primarily in freight service, they will also have to haul a number of passenger trains. A maximum speed of 80 m.p.h. is provided for.

It has been found possible to arrange the workings of the few winter passenger services involved so that only small numbers of vehicles will be needed, and it has therefore been practical to adopt electric heating of the same type as that used with electric locomotives. By the elimination of the steam boiler, its equipment and water tanks, it has been possible to fit a larger and more powerful diesel engine, which drives the electric heating generator in addition to the main generator for traction purposes. Apart from its simplicity an advantage is that when any of the additional power of the larger engine is not required for heating it becomes automatically available for traction, as when hauling a freight train, or a passenger train whose heating does not need the whole of the extra output. This will be particularly useful on the Southern Region where the proportion of passenger duties in the summer will be quite high. The principle is new to this country but there have been some applications abroad.

Increased Horsepower

Basically, the design broadly follows that of the Birmingham Railway Carriage and Wagon Type 2 fitted with a Sulzer six-cylinder engine and Crompton Parkinson electrical equipment. Elimination of the steam heating equipment has, however, made it possible to fit the eight-cylinder version of the same engine, giving 1,550 h.p. without increase in locomotive weight, and the locomotive is accordingly classified B.R. Type 3. The traction motors and certain other equipment are interchangeable with those of the Type 2 locomotives. The locomotives were designed and are being built to the requirements of the British Transport Commission under the overall direction of Mr. J. F. Harrison, chief mechanical engineer, and Mr. S. B. Warder, chief electrical engineer, British Railways Central Staff, Mr. W. J. A. Sykes, chief mechanical and electrical engineer of the Southern Region, being responsible for liaison with the contractors and for inspection and testing.

The general locomotive design and the layout of the equipment can be seen from the accompanying drawing; leading dimensions and particulars are given in the table. The continuous rating tractive effort is 26,000 lb. at 17.5 m.p.h. A 1-hr. tractive effort of 30,000 lb. at 15 m.p.h. is obtainable and the maximum tractive effort is 45,000 lb.



Type 3 diesel-electric locomotive with Sulzer-Crompton Parkinson equipment for Southern Region, built by Birmingham Railway Carriage and Wagon Co., Limited

LEADING DIMENSIONS

Starting tractive effort	45,000 lb.	Length over buffer beams	46 ft. 9 in.
Continuous rated tractive effort	26,000 lb. at 17.5 m.p.h.	Length over buffers	50 ft. 9 in.
Weight in working order	73.5 tons	Gear ratio	62/17
Fuel capacity	800 gal.	Diesel engine	Sulzer 8LDA28
Wheel diameter	43 in.	B.S.S. continuous rating	1,550 b.h.p. at 750 r.p.m.
Bogie wheelbase	10 ft.	U.I.C. continuous rating	1,600 b.h.p. at 750 r.p.m.
Bogie pivot pitch	29 ft.		

Bogies

The bogies are of the same design as those on the Scottish Region Type 2 locomotives numbered from D5320 onwards. The solebars, headstocks and transoms are fabricated from mild steel plate and finally welded together to form one structure which is fully stress relieved after final assembly. All main members are of hollow box formation and the main solebars are in direct line with the journal centres. The bogies are of the equalising beam type and are fitted with large diameter cast steel centre bearings with phosphor bronze wearing plates and manganese steel driving faces. Bogie springing is by nests of helical springs, the secondary springs being damped by hydraulic shock absorbers. The four axles are motored, the motors being axle hung and nose suspended to the bogie frame. The bogies are equipped with orthodox equalised clasp brakes, a separate brake cylinder being provided for each wheel. A hand parking brake operated from the adjacent cab applies to the inner pair of wheels.

Wheels

The wheels are built up of rolled steel centres with Class D tyres 5¼ in. wide secured by retaining rings. The axles, which are machined all over, have ground and polished journals for motor suspension bearings. Roller bearing axle boxes of the SKF type are fitted and the horn guides have manganese liners. One axlebox carries the Smith-Stone speedometer generator and another the mileage recorder. Four sand boxes are provided on each bogie, two for each direction.

Body

The underframe and bodysides, which are of the built-up girder arrangement, are designed as an integral structure sharing all superimposed stresses. The underframe itself is suitable for buffing loads of 150 tons and is fitted with Oleo-pneumatic side buffers and a centre screw coupling; provision is made for automatic centre couplers if these are required at a later date. An inner floor over the whole area of the deck provides a space for all the cable and pipe runs. On one side of the locomotive the cables are cleated into a duct which is sealed against ingress of water and oil; the pipe lines run underneath the opposite side. Large doors are provided on each side of the engine room to facilitate handling of equipment during maintenance and overhaul. For major overhauls there is a large removable roof section of glass fibre, with translucent panels, through which the complete engine generator set can be removed. This section also has auxiliary traps for the removal of cylinder heads, pistons, radiator panels and other units.

At each end is a driving cab with side access doors. The driving controls are duplicated so that the locomotive may be driven from either side of the cab, whether the driver is seated or standing, thus facilitating shunting. On the control desk are the driver's straight air brake and automatic air (and vacuum) brake valves together with the master controller and, on a sloping panel, instruments, auxiliary switches and indicator lights. The master controller itself is built in to the centre section of the desk and has handles on both sides operating the controller cams, through shafts and gears. Provision is made in the layout for the installation of automatic warning system gear. The cabs are of double skin construction for sound and heat insulation. The front windows are fitted with gold film demisting equipment.

Brake Equipment

Brake equipment is of the Oerlikon automatic air type manufactured by Davies and Metcalfe. The four 8-in. diameter air brake cylinders on each bogie operate at a maximum pressure of 70 lb. per sq. inch. For locomotive braking the only

(*Continued on page* 14)

FOR MOTORWAY OPERATION

Eight-Wheeler and Trailer Do 52 M.P.H.

NOW in service with John Buckley and Co. (Warrington), Limited, is the first vehicle which it has specifically acquired for fast operation over the M1 motorway en route from Lancashire to London and the Home Counties. This is an Atkinson eight-wheeler which is equipped to draw a trailer. The new vehicle combination entered service on February 1, its first load being 21¼ tons of cartoned goods from Warrington to a Hertfordshire destination. The rated payload is about 22 tons within the 32-ton gross limit.

The Gardner 6LX 150-b.h.p. engine was specified because of the notable improvement in output and torque over the 6LW engine and matched to it is a ZF AK6/55 six-speed gearbox, with auxiliary splitter gearbox. Twin air line braking is fitted, incorporating diaphragms instead of cylinders as the experience of this operator has been that cylinders are prone to corrosion due to the throwing up of freezing salt used on ice or snow-covered roads. The trailer is fitted with a twin-line breakaway safety switch to bring the brakes on in an emergency of that character. Automatic lubrication is standard on all new additions to this fleet and the Atkinson has 60 points so treated.

In line with practice by this operator, the trailer is actually a Scammell 8-ton semi-trailer with a dolly coupled to the front end in order to convert it to a drawbar trailer. The advantage is that the trailer may quickly be detached from the dolly by operation of the automatic coupling, and it may then be attached in the ordinary way to a tractor, becoming an articulated unit independent of the trunk vehicle for collection or delivery of the load. Wheels of the Atkinson are fitted with 9.00-24 14-ply Firestone tyres and those of the trailer with 7.50-20 tyres.

The standard Atkinson glass fibre cab is protected by a full width front bumper, which also carries the front trailer connection. A 2-in. thick plastics foam bonnet cover damps engine noise considerably, a feature to which Buckley attaches much importance, increasingly so as longer runs become possible on the motorway. Two security devices have been installed in the cab to deter the vehicle thief "with possible painful results."

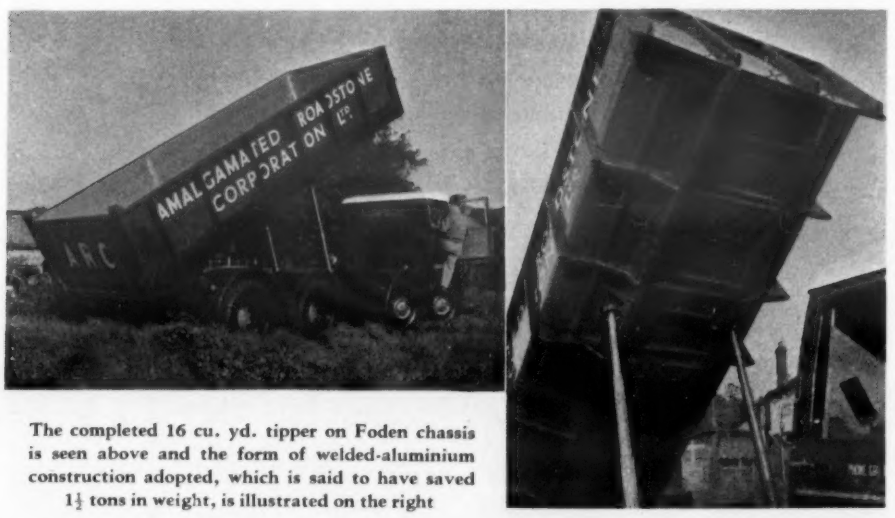
On the first trip south the vehicle and trailer touched 52 m.p.h. en route to Watford on the motorway. The ZF gearbox ratios were found to work perfectly with the 6LX engine and the auxiliary box. Low sixth (top) gear was used to bring the vehicle up to about 30 m.p.h. and high sixth gear, as already indicated, permits a maximum road speed of about 52 m.p.h. It is felt that the auxiliary box splitting the gears will be useful in securing optimum speed on inclines.

The Atkinson 150-b.h.p. eight-wheeler with its Scammell trailer operating over the M1 motorway for John Buckley and Co. (Warrington), Limited. The payload is about 22 tons

Welded Aluminium Tipper

NORAL USED BY AMALGAMATED ROADSTONE

LOAD-CARRYING capacity combined with exceptional light weight characterises a new all-welded aluminium-alloy tipper body recently completed by Amalgamated Roadstone Corporation, Limited, at its Metalair Works, Wokingham. Designed for carrying granite chippings, the body weighs only 12½ cwt. and has a capacity of 16 cu. yd., giving it a payload of 16¼ tons. It is believed to be one of the largest welded aluminium bodies ever made in this country. By adopting aluminium construction, 1½ tons of body weight is said to have been saved, resulting in a corresponding increase in the load that may be carried on the same chassis. Perhaps equally significant is that the natural corrosion-resistance of the aluminium used is likely to ensure for the vehicle body a long maintenance-free life, even in the most arduous conditions.



The completed 16 cu. yd. tipper on Foden chassis is seen above and the form of welded-aluminium construction adopted, which is said to have saved 1½ tons in weight, is illustrated on the right

Aluminium Longevity

In a tipper carrying abrasive materials, scouring of the inside of the body is inevitable. Any protective coating such as paint would be quickly removed, leaving the bare metal exposed. With an aluminium body, instead of progressive and rapid corrosion then taking place, natural protection is afforded by an oxide film, which seals itself immediately if damaged. It is this inherent self-protecting characteristic of aluminium that gives it a long life in conditions that would destroy many other metals. The comparatively low modulus of elasticity of aluminium, moreover, gives it the ability to withstand a great deal of rough handling and impact loading; past experience with aluminium-bodied tippers tends to confirm that longevity in a hard-used aluminium body can be virtually taken for granted.

The body of the new vehicle, which is mounted on a Foden 8-wheeled chassis, is of welded U shape, the flat floor being a single piece of BS 1477: NP5/6 aluminium alloy plate, ¼ in. thick, with sides of 8 s.w.g. (0.16 in.) alloy sheet to BS 1470: NS5 specification, formed at the bottom to a 10-in. radius. The tipping subframe is made up of two full-length longitudinals formed from ⅜-in. NP5/6 plate. As is usual with welded bodies, outriggers are used to support the floor between the main longitudinals and the sides and these are secured to the bottom of the side pillars with gussets. An interesting departure from customary practice is the use of formed stabilising struts between the bottom flanges of the longitudinals at the outrigger positions instead of full-depth crossmembers. Similar folded sections are used at closer pitch to support the central part of the floor. Further longitudinal stiffening is provided by folded sheet sections in a "bilge-keel" position, welded on where the sides curve in to meet the floor.

The 8-s.w.g. front bulkhead is carried over the ends of the subframe longitudinals and, like the tailboard, is braced by formed-sheet sections similar to those of the side pillars. Underbody tipping gear is used, the subframe being reinforced at the gear attachment points. Northern Aluminium Co., Limited, supplied aluminium alloys and welding was carried out using Argonaut equipment supplied by the British Oxygen Co., Limited.

Though in points of detail an unusual design, the tipper is a good example of the efficient use of a bodybuilding material that merits thoughtful application. When the necessary equipment is available to the bodybuilder, the construction of a light-alloy body from formed sheet and plate in this way, rather than from extruded sections, is undoubtedly a method with great potentialities. As much as 3 cwt. might well have been saved by adopting welded instead of riveted construction, and as the modern fluxless aluminium welding processes come into wider use, this method of jointing can hardly fail to find extensive application in vehicle bodybuilding in light alloys, a field now employing bolting and riveting almost exclusively.

NEWS FROM ALL QUARTERS

Road Casualties in 1959

Accidents on the roads of Great Britain in December resulted in 881 deaths. This was 185 more than in December, 1958, and the highest monthly total since December, 1941, when the streets at night were blacked out. The total fatalities for 1959 were 6,520, an increase of 550, and the numbered injured was 326,933, an increase of 33,136.

Bus Travel in Eire

The total number of passengers carried on bus services in Eire last year was 294,070,000, compared with 297,654,000 in 1958. Of this figure, 235,260,000 were carried on the Dublin city and suburban services, compared with 238,607,000 in 1958. Mileage run was 49,117,000, compared with 48,304,000 and gross receipts rose from £5,779,141 to £6,055,432.

New Types of Fluorescent Lighting

From America comes news of a fluorescent light optical unit having a special value for outdoor installations, since it throws a narrow band of light for a considerable distance without glare. A prototype unit has been demonstrated on a car, extending across the radiator grille between conventional headlamps. An even distribution of light with a sharp vertical cut-off is claimed.

Japanese Rail Tender

The Australian Federal Government has accepted a tender from Japan for the supply of new steel passenger cars and other rolling stock for the Commonwealth Railways. A spokesman said there was a wide disparity between the Japanese price and the lowest Australian offer. The Japanese tender, it was stated, was the only one that stipulated a fixed price and was therefore not subject to variations in labour and material costs.

New Swansea Dock?

A new dock, costing in the region of £60 million, may be built in Swansea Bay. Boring operations near the present Port Talbot Docks, which are inadequate for the needs of the Abbey works of the Steel Company of Wales nearby, have already been carried out. The B.T.C. has admitted that discussions "of a preliminary nature" had been going on between the Commission and the Steel Company of Wales on the possibility of Port Talbot being extended to take larger iron ore carriers.

Alweg System for Essen?

Municipal authorities of Frankfurt-on-Main are sufficiently interested in the Alweg monorail system to have asked the Cologne Alweg company for full details of a possible installation, and Essen is also considering such a system. A start is in fact to be made this spring, it is now stated, on the building of a three-mile-long experimental line from the Essen central railway station into the northern suburbs. Before this, however, will come the building of a working model. The nearby city of Wuppertal has now been operating its Schwebebahn monorail line for many years, but that is, of course, a suspended railway.

Handling Methods at Exhibition

Latest methods of mechanical handling for the brewing and bottling trades will be shown at the Brewers' and Allied Traders' Exhibition, in future to be known as the Brewing, Bottling and Allied Trades' Exhibition at Olympia, from October 3 to October 7.

Channel Tunnel Report

Discussions in London between the Channel Tunnel Study Group and the bodies which have reported on the feasibility of this project have been concluded. These bodies are the Economist Intelligence Unit, the Society d'Etudes Techniques et Economiques, of Paris, and Leuro Cather and Company, of Chicago. Their report is known to be in favour of a Channel tunnel which they consider is technically possible and would be an economic success. The report is now expected at an early date.

£30 Million Out in Estimates

Hungarian nationalised transport services finished 1959 with a profit—for the first time ever, it is boasted. In fact, though some profit had been anticipated, final figures showed a surplus of 1,000 million forints (about £30 million) greater than had been expected. This year more people are expected to travel by long-distance bus than by rail. The railways themselves are steadily changing from steam to diesel. Last year the stock of diesel engines went up from 48 to 120. This year 48 more are to be added. The road investment was about £75 million, it is stated.

Hastings Traffic Inquiry

A seven-day inquiry into a Hastings Corporation master plan to defeat summer traffic jams in the town ended on February 11. Much of the time was occupied with arguments for and against turning the main shopping thoroughfare, Robertson Street, into a one-way street running east to west; the conversion of King's Road, St. Leonards, into a one-way street with unilateral waiting for cars; and the proposed ban on the waiting of cars throughout almost the entire length of Queen's Road. All these proposals were backed by Maidstone and District Motor Services, Limited.

Hook Underpass Opened

Lord Chesham, Joint Parliamentary Secretary, Ministry of Transport, on February 12 opened the £400,000 Hook Road underpass on the Kingston by-pass. It is the first of its kind in the London area. At ground level the junction now takes the form of a large roundabout. Two pre-stressed concrete road bridges are connected by four slip roads to the trunk road, which runs under the roundabout through a cutting between 25-ft. high retaining walls. A steel pedestrian bridge goes over the by-pass east of the junction. The underpass, dual 24-ft. wide carriageways, has thermostatically controlled heating cables laid in its surface to prevent icing. The underpass is designed to accept 6,000 vehicles an hour with ease; at present the peak flow is about 3,000 an hour.

COMMERCIAL AVIATION

Government Measures

FINNAIR CARAVELLES

IN a statement in the House of Commons on Monday the Minister of Aviation, Mr. Duncan Sandys, said that except where specialised requirements or public policy made it necessary to do otherwise, it was intended to concentrate Government on five main groups in the aircraft industry, two making fixed-wing airframes and guided weapons, one making helicopters and two making aero-engines. The sharp reduction in Government orders for military aircraft, which represented such a large part of the industry's business, had made it urgently necessary to expand sales of civil types at home and overseas. In view of this growing importance of the civil market, the Government had decided to provide increased support, where appropriate for promising civil aircraft projects and aero-engines. The nature and extent of the assistance would vary. It might contribute towards the development, tooling or other initial costs of launching a new type. In order to enable earlier delivery dates to be offered, the Government might also, in suitable cases, take a share in the risks involved in producing a limited number of aircraft beyond those for which firm orders had been received. Furthermore, the Government might be prepared to contribute towards the costs of proving a new type of civil aircraft and of introducing it into regular airline service. Suitable arrangements would be made for the Government to participate in the proceeds from sales. The manner in which these would be shared between the Government and the firm would vary and would depend, among other things, upon the proportion of the risks borne by each.

Finnair Caravelle Programme

The Finnair summer timetable shows that the Finnish airline expects to bring Caravelles into service on April 1 on the daily Helsinki—Copenhagen—Cologne—Frankfürt service and also to operate one flight daily of its Helsinki—Stockholm service. From April 18 the aircraft will take over the services from Helsinki to London and Paris via Hamburg and Amsterdam and from April 23 they will operate a weekly night tourist flight from Helsinki to Zurich via Malmö.

Douglas and the Caravelle

Sud-Aviation and the Douglas Aircraft Company have reached a working agreement under which Douglas will represent Sud-Aviation in all matters affecting the Caravelle transport in large areas of the world and have rights to its manufacture in the United States. The understanding calls for co-operation between the French and United States companies in other technical and business projects. This will include Douglas technical co-operation with Sud-Aviation in further development of the Caravelle series. Territory in which Douglas will represent Sud-Aviation in these matters includes Great Britain, Australia, virtually all the Western Hemisphere, Japan, India, Pakistan and other parts of Asia plus substantial portions of Africa and the Middle East. Sud-Aviation will continue to represent its own interests in Continental Europe and French-speaking areas around the world.

Aer Lingus Summer Services

Aer Lingus summer timetables will include, as foreshadowed, three new routes as well as reduced fares on some routes and higher frequencies. It has also been confirmed that the new Boeing 720s, scheduled for delivery next November, will go into service on the North Atlantic route before Christmas. The three new routes are: Dublin—Leeds; Dublin—Cherbourg; and Shannon—London. Services will begin on the Dublin—Leeds route on April 2. Initially there will be two round trips each week increasing to four weekly at the peak of the summer. As already announced, the Dublin—Cherbourg route will open on June 1 and two return flights weekly will be provided until September 30. From May 30 there will be a daily Viscount services on the Shannon—London route. On the Dublin—London route, cheap Dawnflights and Starflights will continue operation into October. Other cross-Channel routes which will have more flights are Dublin—Bristol, Dublin—Cardiff, and Dublin—Blackpool. The number of flights to Jersey will be increased to five a week between July and September, with three operating midweek. Increased frequencies are also scheduled for a number of Continental services. There will be an extra Dublin—Manchester—Düsseldorf service in addition to the twice-weekly Dublin—Manchester — Düsseldorf — Copenhagen service. From mid-July to mid-September there will be three flights per week on the Dublin—Manchester—Brussels—Frankfürt route. Rome will be served by one flight via Paris and Zurich weekly and one via Lourdes, increasing to two flights weekly on both routes at the peak as last year, but there will be additional flights for the Olympic Games via Manchester and Zurich from mid-August to mid-September. From April to October, a total of 548,636 seats will be available on scheduled Aer Lingus services. This represents a 12.5 per cent increase on the figure of 488,000 for the same period of last year. Last year Aer Lingus achieved a load factor of 67.2 per cent—the highest in Europe.

Air Licensing Bill

The first reading has been given to the Civil Aviation (Licensing) Bill which is intended to ensure that all aircraft operators maintain proper standards of safety and also to regularise the licensing system for scheduled and other air services and give independents equal rights with the corporations. As regards the former it is provided that, without exception, all aircraft operators must obtain an air operator's certificate from the Director of Aviation Safety to the effect that, from the standpoint of safety, their equipment, organisation, staffing and operational arrangements are adequate for the type of service proposed. The licensing system involves the establishment of a Air Transport Licensing Board, which will also take over the other functions of the Air Transport Advisory Council. The special reservation of routes to the corporations under the 1949 Act will be abolished. The new measure eliminates the need for independent air lines to become associates of one or other of the corporations in order to operate scheduled services (a legal fiction to which there has been no wholehearted subscription). There is a right of appeal to the Minister of Aviation against any licensing decision of the Board—it may be assumed that an inspector will be appointed to hear any such appeal.

A LOSS TO ROAD TRANSPORT

The late Mr. R. MORTON MITCHELL B.L., D.P.A., M.Inst.T.

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We record with great regret elsewhere in this issue the death of Mr. Robert Morton Mitchell at the age of 51. He had been chief executive officer and secretary of the Road Haulage Association since January, 1949, and secretary of the National Road Transport Federation since May, 1952. Born in Edinburgh, he was educated at the Royal High School and at Edinburgh University, where he graduated in law in 1929. Later he took a public administration diploma at London University. Qualifying as a Scottish solicitor in 1930, he spent the next 14 years in local government service, 10 of them with Edinburgh Corporation and the remainder as town clerk of Johnstone. In 1945 he was appointed general secretary of the Iron and Steel Trades Employers' Association and was consequently involved in much work connected with wages and conditions of employment in the steel industry, whilst, in 1946, he attended the first meeting of the Iron and Steel International Committee of the International Labour Organisation on behalf of the British Iron and Steel Federation. In the following year he became secretary of the Relay Services Association of Great Britain, relinquishing that post to take up his appointment with the R.H.A. Mr. Morton Mitchell was a member of the Road Haulage Wages Council set up by the Minister of Labour under the Wages Councils Act of 1948, and a member of the committee of management of the British Road Federation. With his responsibility for the general direction of the R.H.A., he was closely concerned in negotiations with the British Transport Commission and the Ministry of Transport in connection with the working of the Transport Act of 1947, and with the formulation of the association's policy when the 1953 Transport Act was passing through Parliament. He was a member of the London Travel Committee and of the Roads Campaign Council; he was a member of the Institute of Transport and a liveryman of the Worshipful Company of Carmen. He served on Southgate Borough Council, 1953-59, on the North Middlesex Valuation Panel and on the Eastern Gas Consultative Council.

IN PARLIAMENT

Strategic Value of Railways

BUS CONCESSIONS BILL

MR. H. J. BOYDEN asked the Minister of Defence to reassess the military importance of British Railways to the service departments, with a view to estimating, in conjunction with the British Transport Commission, what capital and current costs the service departments should contribute to the British Transport Commission in respect of service needs. MR. H. WATKINSON said he would not. A very large number of public utility and commercial undertakings are of military importance, but this does not mean that the service departments should contribute to their costs, except as customers.

Surely the railways were in a rather different position from that of other enterprises, retorted Mr. Boyden. Surely in times of war their value to the country was greatly increased. The Minister of Defence should make some allowance for this and assess what this contribution was to the defence services. Mr. Watkinson said he was advised that during the current financial year British Railways would recover about £13 million from the defence vote.

B.T.C. Not to be Supplier

By 189 votes to 135 leave was refused to MR. BAIRD (Wolverhampton North-East) to introduce a Transport Act 1947 (Amendment) Bill, to enable the British Transport Commission to manufacture and repair locomotives and rolling stock for use other than by the Commission. MR. SHEPHERD (Cheadle) said the Bill had to be opposed on the grounds of national interest, in the interests of the Transport Commission, and because it was causing grave anxiety in 50 or more private workshops. If the amount of available capacity for making locomotives, carriages and wagons was increased, in a short time there would be a surplus. The B.T.C. was not in a position to indulge in sales of locomotives oversea.

Bailey Bridges for Flyover Experiments?

Answering a question from SIR WAVELL WAKEFIELD, MR. ERNEST MARPLES said that he had now been fully into the question whether there should be temporary arrangements, with Bailey bridges, or permanent arrangements to hasten traffic flow at some busy intersections and he had come down in favour of permanent arrangements being made. It was a very difficult decision. He had looked at sites such as Lambeth Palace Road, Kennington Triangle, Temple Mills Bridge, Bow Bridge, Roehampton Vale, and the Tolworth junction on the Kingston by-pass. On balance it was better to concentrate on permanent improvements, but if there were any sites where a Bailey bridge could help out temporarily he would certainly consider them.

Extension of Bus Travel Concessions

The Commons gave a formal first reading to the Public Service Vehicles (Travel Concessions) Amendment Act, the purpose of which is to amend the 1954 Act with a similar title. That Act authorised local authorities to allow free travel or reduced fares for old people, the blind, children or disabled persons but only where such concessions were in force in November, 1954. Since then many new housing estates have been added and the purpose of the present Bill, which was introduced by MR. E. SHORT, is to remove this anomaly, but it would exclude concessions to new classes of passenger, e.g. local councillors. The Bill would also empower local authorities which did not give concessions in 1954 to do so in future. At present they are debarred. It is to be given a second reading on March 4.

Money for Air Corporations

LORD MILLS, Paymaster-General, moved the second reading of the Air Corporations Bill which, he said, increased the borrowing powers of B.O.A.C. and B.E.A. to cover their requirements for the next four years. He said the Minister of Aviation was well aware of the heavy burden on the corporations of the cost of proving and developing aircraft. There was nothing wrong about it. There might be differing views whether the corporations should be relieved, but for the moment they had borne it and that should be taken into consideration when looking at their results. The future position of the B.O.A.C. subsidiaries looked much healthier and it was expected that their losses would be reduced considerably. He agreed that rates of depreciation should be sufficient to cover the purchase of new aircraft only to the extent that they were existing aircraft, for extensions of the fleet had to be provided for in other ways.

FORTHCOMING EVENTS

Feb. 22.—I.Mech.E. (Education). "The Place of Management Studies in the Training of an Engineer." 1 Birdcage Walk, S.W.1. 6 p.m.

Feb. 23.—Inst.T. (Yorkshire). A. K. Dytch, "Economics of Motive Power Operation." Leeds City Transport, 1 Swinegate, Leeds, 1. 7 p.m.

Inst.T. (West Middx). R. C. Morgan, "Aircraft of the Future." Control Tower Building, London Airport Central. 6 p.m.

Inst.H.E. (S.M.). L. W. Budden, "The Manufacture and Use of Hot Rolled Asphalt." At Aylesbury.

Inst.C.E. (Traffic Engineering). Informal Discussion, "Junction Design on Motorways." Great George Street, S.W.1. 5.30 p.m.

R.Ae.S. A. J. Troughton, "Relationhip between Theory and Practice in Structural Problems." 4 Hamilton Place, W.1. 7 p.m.

O.S. W. T. Lambden, "Londonderry and Lough Swilly Railway." Victoria Coach Station, S.W.1. 6.45 p.m.

I.Mech.E. (Lubrication). Discussion, "Water Lubrication." 1 Birdcage Walk, S.W.1. 6 p.m.

Feb. 24.—Rly.S.A. and W.R.L.L.D.S. Debate, "That a Complete Unification of Inland Transport including Air is Essential to the Economic Welfare of Great Britain." London School of Economics, Houghton Street, W.C.2. 6.15 p.m.

R.Ae.S. Peter Scott, "Natural Flight." 4 Hamilton Place, W.1. 7.30 p.m.

P.R.D.G. Dr. W. R. Buckland, "Statistics Can Lie!" Eastfield Road, Peterborough. 6.45 p.m.

E.R.S. (Birmingham). J. R. Bates, "London Rhapsody; Variations on a Tube Theme." Exchange and Engineering Centre, Birmingham. 7.15 p.m.

R.C.T.S. (Bristol). Film show. J. McCann. Re-union Meeting. Grosvenor Hotel, Bristol, 1. 3 p.m.

S.R.L.D.S. Continental Tour Films. Chapter House, St. Thomas Street, S.E.1. 6 p.m.

I.Mech.E. B. Wood, "Wetness in Steam Cycles." 1 Birdcage Walk, S.W.1. 6 p.m.

Feb. 25.—L.M.R.L.D.S. Presentation of prizes and reading of prize essay. Clerical Staff Dining Club, Cardington Street, N.W.1. 5.45 p.m.

Feb. 27.—L.R.T.L. J. H. Price, "The Grimsby and Immingham Tramway." 153 Drummond Street, N.W.1. 6.30 p.m.

R.C.T.S. (S. England). W. Stearne, "Industrial Railways in the Southampton Area." Junction Hotel, Eastleigh. 6.30 p.m.

O.S. (N.W. and Yorkshire). G. I. McKay, "The Most Notable Technical Developments in Municipal Transport since 1945." Houldsworth Hall, Deansgate, Manchester. 4 p.m.

TERYLENE-COTTON TARPAULINS

Reports on Service Trials

REPORTS on service trials of Terylene-cotton tarpaulin sheets for transport vehicles speak of encouraging results. Three 24 ft. by 21 ft. sheets (suitable for eight-wheeled lorries) have been in use by British Road Services in the North-Western Division for some time over general traffics. This is what B.R.S. has to say of them: "The tarpaulins have worn extremely well for 10 months and an interesting point is that there is no indication of damage from tearing or rope abrasion. Normal cotton sheets would be called in after six months' use for general repair. The main advantage of the Terylene-cotton covers is their lightness in weight and they are easy to handle. In wet weather they are easy to unfold and their much higher tear strength should lead to considerably longer life."

The three 24 ft. by 21 ft. Terylene-cotton load sheets used on this B.R.S. eight-wheeler are reported to have survived 10 months' use without signs of rope abrasion or tearing, a marked improvement on experience with normal cotton sheets

Econofreight Transport, Limited, has been using a trial Terylene-cotton core spun lorry sheet for nine months on a lorry carrying chemicals. It has already lasted twice as long as any cotton tarpaulin used previously. This operator has ordered a further 18 similar tarpaulins. Evan Cook's Packers, Limited, found the sheet's toughness and abrasion resistance ideal for protecting really heavy loads.

In fact, field trials have been going on over the last two years throughout Britain on this new tarpaulin fabric, which is woven from yarn having a central core of Terylene surrounded by cotton. Standard dry chemical and wax proofings can be applied to render the tarpaulin waterproof, enabling it to breathe and retain its conventional appearance. This form of tarpaulin is considered as strong as a heavier 100 per cent flax tarpaulin, and stronger than a 100 per cent cotton tarpaulin of twice its own weight. It will last longer than either. Combining better waterproof properties with greater resistance to rotting, it has good resistance to rope scuffing, will not shrink when wet, and dries out swiftly.

Weight and Tear Strength

Fabrics weighing 8 oz. and 12 oz. per sq. yd. have so far been developed. These two weights should be suitable for tarpaulins where 12-18 oz. and 18-24 oz. cotton and flax fabrics are at present used. An 8-oz. fabric of 50 per cent Terylene and 50 per cent cotton is about half the weight and has nearly double the tear strength of a 15-oz. cotton fabric. A 12-oz. Terylene-cotton fabric has three times the tear strength of an 18-oz. cotton fabric. The fabric from which these tarpaulins are manufactured is an I.C.I. product.

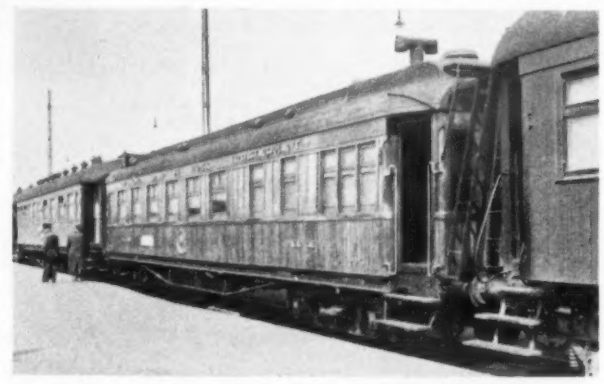
Withdrawal from Finland

END OF WAGONS-LITS BRANCH

HALF a dozen dining-cars more or less to a company of which the services stretch from London to Baghdad, and which dispatches 60 diners every morning from Paris, not to mention the hundreds running elsewhere, is a matter of little moment. But, historically, the cessation of the three Wagons-Lits services from Helsinki on October 31, 1959, closed an era.

Wagons-Lits has been in Finland since about the turn of the century, when one dining-car ran from Leningrad to Helsinki, or more properly in the terminology of the day from St. Petersburg to Helsingfors. After 1917 the Finnish dining-cars remained the sole Wagons-Lits operation on the Russian gauge. Finland is the only European country in which the Wagons-Lits ran diners without also running sleeping-cars. After Viipuri became Russian there was a further curtailment.

The six vehicles which worked latterly from Helsinki to Turku, or Abo as it is called in Swedish, and the Haapmaki, and formerly Viipuri are teak cars of the standard gauge, fitted with 5-ft. gauge bogies locally. They are smaller than Russian-gauge cars, therefore, and their low height permits a chimney to be fitted to the kitchen. Among them are the sole survivors in service of the class of dining-car which included No. 2419 in which the Armistices were signed in 1918 and 1940, and which was destroyed in Berlin by the Gestapo on Hitler's express order in 1944. A replica was installed at Compiègne Museum in 1950. The six Finnish cars are still running but they no longer carry the company's title in Finnish on one side and Swedish on the other—the only cars of the company to use either language.



Wagons-Lits dining-car No. 2013 at Helsinki showing the Swedish title of the company—it appeared in Finnish on the other side

B.P. in 1959

PROGRESS IN GOLDEN JUBILEE YEAR

THE year 1959 was a particularly memorable one for the British Petroleum Co., Limited, for in it the company completed its first half-century. During its jubilee year the emphasis in B.P. activities was on the continued extension of its wide interests and development of its physical assets. In Libya, where B.P. Exploration Company received additional prospecting concessions, a deep test well was started in October and extensive survey work was in progress at the close of the year. Exploration and drilling activities were continued by B.P. companies and companies in which B.P. has an interest in France, French North Africa, French West Africa, East Africa, New Zealand, Papua and underwater in the Persian Gulf.

In Nigeria, there was further progress in establishing production on a commercial basis and in 1960 it is expected to reach 1,250,000 tons annually. In England, B.P. Exploration Company made two oil discoveries, at Gainsborough, Lincolnshire, and Kimmeridge, in Dorset. In 1959, as in other years recently, B.P. drew most of its crude oil supplies from the four Middle East countries of Iran, Iraq, Kuwait and Qatar. During the year extensions to facilities for exporting crude oil were completed at Kuwait and under construction in Iran and Iraq.

Tanker Fleet

For the B.P. tanker fleets, the highlight of 1959 was the launch of the *British Queen* by H.M. Queen Elizabeth the Queen Mother in September. The first 50,000 d.w. tons vessel for B.P., *British Queen* is the largest tanker yet built in the United Kingdom. She sailed on her maiden voyage to the Middle East a few days before Christmas. The new jetty at Finnart, Scotland, capable of accommodating vessels up to 100,000 d.w. tons, was officially opened last June and work continued during the year on the new deep-water port being built by B.P. at Angle Bay on Milford Haven, which will be completed in 1960. The 60-mile pipeline joining the new terminal with Llandarcy Refinery was completed in November.

The group's first refinery in Canada, with an initial processing capacity of 1 million tons a year, is nearing completion at Vi'le d'Anjou, near Montreal, and construction is also well advanced on the 4,400,000 tons a year refinery at Dinslaken in the Ruhr, due for commissioning in mid-1960. At Grangemouth Refinery, Scotland, a new distillation unit was completed which raised capacity from 2.2 to 3.2 million tons per year. The major development at Llandarcy Refinery was the opening of a new laboratory block, while the construction of a plant to manufacture special boiling-point solvents was started at Kent Refinery. Kuwait Refinery, where B.P. has a 50 per cent interest, commissioned a platformer unit in July to produce higher octane motor spirit, and at Porto Marghera Refinery near Venice, in Italy, a hydrofiner unit for removing sulphur from gas oil was brought into use.

At the Grangemouth works in Scotland of B.P.'s associated company, British Hydrocarbon Chemicals, Limited, there was progress on the construction of a new ethylene plant, while in Germany, Erdolchemie, G.m.b.H., jointly owned by B.P. Benzin und Petroleum A.G. and Farbenfabriken Bayer A.G., commissioned a number of units at its new Dormagen works, including a cracking and gas separation plant for producing ethylene and a plant for the manufacture of glycols. Naphtachimie S.A., in which B.P. has an interest, announced plans for the erection of a unit to produce 6,000-7,000 tons of butadiene a year.

There was continued progress by the B.P. Research Centre at Sunbury-on-Thames, following the formation of a new division for petroleum chemicals research at the beginning of 1959. In London, an electronic analogue simulator was installed by the engineering division of Refineries and Technical Department, for research work on the development of automatic control systems for production and refining processes.

As in previous years, the company has published its annual pictorial review, *News in Pictures*, for issue to stockholders, employees and others interested in the company. Many of the events mentioned above are illustrated in the 1959 booklet.

ROAD VEHICLE INDUSTRY

N.S.U.-Wankel Engine Discussion

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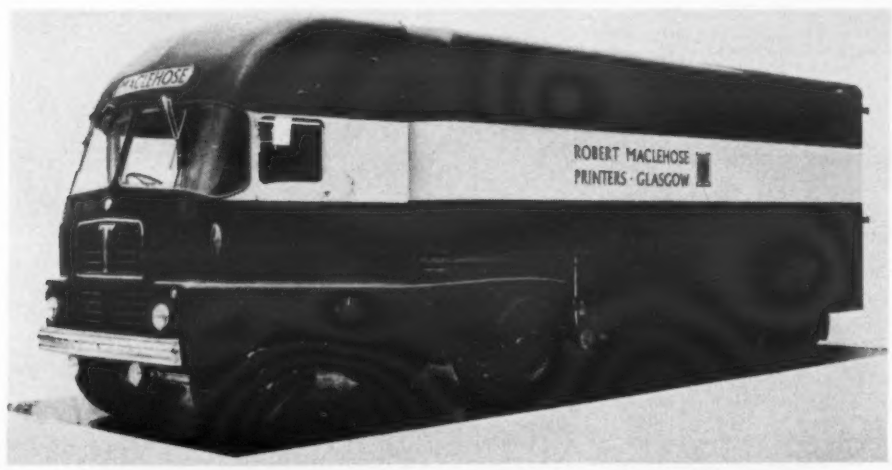

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TERYLENE-COTTON TARPAULINS

Reports on Service Trials

REPORTS on service trials of Terylene-cotton tarpaulin sheets for transport vehicles speak of encouraging results. Three 24 ft. by 21 ft. sheets (suitable for eight-wheeled lorries) have been in use by British Road Services in the North-Western Division for some time over general traffics. This is what B.R.S. has to say of them: "The tarpaulins have worn extremely well for 10 months and an interesting point is that there is no indication of damage from tearing or rope abrasion. Normal cotton sheets would be called in after six months' use for general repair. The main advantage of the Terylene-cotton covers is their lightness in weight and they are easy to handle. In wet weather they are easy to unfold and their much higher tear strength should lead to considerably longer life."

The three 24 ft. by 21 ft. Terylene-cotton load sheets used on this B.R.S. eight-wheeler are reported to have survived 10 months' use without signs of rope abrasion or tearing, a marked improvement on experience with normal cotton sheets

Econofreight Transport, Limited, has been using a trial Terylene-cotton core spun lorry sheet for nine months on a lorry carrying chemicals. It has already lasted twice as long as any cotton tarpaulin used previously. This operator has ordered a further 18 similar tarpaulins. Evan Cook's Packers, Limited, found the sheet's toughness and abrasion resistance ideal for protecting really heavy loads.

In fact, field trials have been going on over the last two years throughout Britain on this new tarpaulin fabric, which is woven from yarn having a central core of Terylene surrounded by cotton. Standard dry chemical and wax proofings can be applied to render the tarpaulin waterproof, enabling it to breathe and retain its conventional appearance. This form of tarpaulin is considered as strong as a heavier 100 per cent flax tarpaulin, and stronger than a 100 per cent cotton tarpaulin of twice its own weight. It will last longer than either. Combining better waterproof properties with greater resistance to rotting, it has good resistance to rope scuffing, will not shrink when wet, and dries out swiftly.

Weight and Tear Strength

Fabrics weighing 8 oz. and 12 oz. per sq. yd. have so far been developed. These two weights should be suitable for tarpaulins where 12-18 oz. and 18-24 oz. cotton and flax fabrics are at present used. An 8-oz. fabric of 50 per cent Terylene and 50 per cent cotton is about half the weight and has nearly double the tear strength of a 15-oz. cotton fabric. A 12-oz. Terylene-cotton fabric has three times the tear strength of an 18-oz. cotton fabric. The fabric from which these tarpaulins are manufactured is an I.C.I. product.

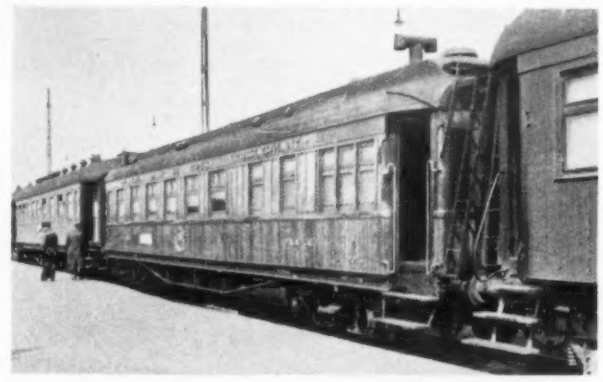
Withdrawal from Finland

END OF WAGONS-LITS BRANCH

HALF a dozen dining-cars more or less to a company of which the services stretch from London to Baghdad, and which dispatches 60 diners every morning from Paris, not to mention the hundreds running elsewhere, is a matter of little moment. But, historically, the cessation of the three Wagons-Lits services from Helsinki on October 31, 1959, closed an era.

Wagons-Lits has been in Finland since about the turn of the century, when one dining-car ran from Leningrad to Helsinki, or more properly in the terminology of the day from St. Petersburg to Helsingfors. After 1917 the Finnish dining-cars remained the sole Wagons-Lits operation on the Russian gauge. Finland is the only European country in which the Wagons-Lits ran diners without also running sleeping-cars. After Viipuri became Russian there was a further curtailment.

The six vehicles which worked latterly from Helsinki to Turku, or Abo as it is called in Swedish, and the Haapmaki, and formerly Viipuri are teak cars of the standard gauge, fitted with 5-ft. gauge bogies locally. They are smaller than Russian-gauge cars, therefore, and their low height permits a chimney to be fitted to the kitchen. Among them are the sole survivors in service of the class of dining-car which included No. 2419 in which the Armistices were signed in 1918 and 1940, and which was destroyed in Berlin by the Gestapo on Hitler's express order in 1944. A replica was installed at Compiègne Museum in 1950. The six Finnish cars are still running but they no longer carry the company's title in Finnish on one side and Swedish on the other—the only cars of the company to use either language.



Wagons-Lits dining-car No. 2013 at Helsinki showing the Swedish title of the company—it appeared in Finnish on the other side

B.P. in 1959

PROGRESS IN GOLDEN JUBILEE YEAR

THE year 1959 was a particularly memorable one for the British Petroleum Co., Limited, for in it the company completed its first half-century. During its jubilee year the emphasis in B.P. activities was on the continued extension of its wide interests and development of its physical assets. In Libya, where B.P. Exploration Company received additional prospecting concessions, a deep test well was started in October and extensive survey work was in progress at the close of the year. Exploration and drilling activities were continued by B.P. companies and companies in which B.P. has an interest in France, French North Africa, French West Africa, East Africa, New Zealand, Papua and underwater in the Persian Gulf.

In Nigeria, there was further progress in establishing production on a commercial basis and in 1960 it is expected to reach 1,250,000 tons annually. In England, B.P. Exploration Company made two oil discoveries, at Gainsborough, Lincolnshire, and Kimmeridge, in Dorset. In 1959, as in other years recently, B.P. drew most of its crude oil supplies from the four Middle East countries of Iran, Iraq, Kuwait and Qatar. During the year extensions to facilities for exporting crude oil were completed at Kuwait and under construction in Iran and Iraq.

Tanker Fleet

For the B.P. tanker fleets, the highlight of 1959 was the launch of the *British Queen* by H.M. Queen Elizabeth the Queen Mother in September. The first 50,000 d.w. tons vessel for B.P., *British Queen* is the largest tanker yet built in the United Kingdom. She sailed on her maiden voyage to the Middle East a few days before Christmas. The new jetty at Finnart, Scotland, capable of accommodating vessels up to 100,000 d.w. tons, was officially opened last June and work continued during the year on the new deep-water port being built by B.P. at Angle Bay on Milford Haven, which will be completed in 1960. The 60-mile pipeline joining the new terminal with Llandarcy Refinery was completed in November.

The group's first refinery in Canada, with an initial processing capacity of 1 million tons a year, is nearing completion at Vi'le d'Anjou, near Montreal, and construction is also well advanced on the 4,400,000 tons a year refinery at Dinslaken in the Ruhr, due for commissioning in mid-1960. At Grangemouth Refinery, Scotland, a new distillation unit was completed which raised capacity from 2.2 to 3.2 million tons per year. The major development at Llandarcy Refinery was the opening of a new laboratory block, while the construction of a plant to manufacture special boiling-point solvents was started at Kent Refinery. Kuwait Refinery, where B.P. has a 50 per cent interest, commissioned a platformer unit in July to produce higher octane motor spirit, and at Porto Marghera Refinery near Venice, in Italy, a hydrofiner unit for removing sulphur from gas oil was brought into use.

At the Grangemouth works in Scotland of B.P.'s associated company, British Hydrocarbon Chemicals, Limited, there was progress on the construction of a new ethylene plant, while in Germany, Erdolchemie, G.m.b.H., jointly owned by B.P. Benzin und Petroleum A.G. and Farbenfabriken Bayer A.G., commissioned a number of units at its new Dormagen works, including a cracking and gas separation plant for producing ethylene and a plant for the manufacture of glycols. Naphtachimie S.A., in which B.P. has an interest, announced plans for the erection of a unit to produce 6,000-7,000 tons of butadiene a year.

There was continued progress by the B.P. Research Centre at Sunbury-on-Thames, following the formation of a new division for petroleum chemicals research at the beginning of 1959. In London, an electronic analogue simulator was installed by the engineering division of Refineries and Technical Department, for research work on the development of automatic control systems for production and refining processes.

As in previous years, the company has published its annual pictorial review, *News in Pictures*, for issue to stockholders, employees and others interested in the company. Many of the events mentioned above are illustrated in the 1959 booklet.

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FOR CONTAINER HANDLING

A.C.C.S. Uses Special Mobile Crane

HIGH-SPEED handling equipment at the ports has been found essential by Anglo-Continental Container Services, Limited, in connection with its services to and from Northern Ireland to load and unload the vessels on time schedules geared to tidal and other maritime considerations. If congestion at the quaysides is to be avoided, however, mobile handling equipment has to be found which will move the containers swiftly and without damage to their cargo from the quay to a container park, where the road haulage vehicles which carry them are loaded and unloaded. Another important condition is that this equipment has to work in narrow aisles so that the full capacity of the park is used. What was needed was a piece of equipment which

The Coles Emperor hammer-head mobile crane transferring a container between park and road vehicle

could work in a narrow aisle, could slew through 360 deg., handle 20 ft.-long 12½-ton containers, hold a load firmly so it does not swing, travel and manoeuvre at a reasonable speed when fully loaded, keep the container almost vertical and, at the same time, lift the load clear of other containers and transport vehicles.

Hammer-Head Mast

The answer was a specially designed Coles Emperor crane. The outstanding design feature on this crane is the unique lifting gear (the subject of patent application No. 15862). Instead of a normal strut type jib this crane is fitted with a special lifting mast made from rolled steel sections and plates in the shape of a "T" or "hammer-head"; and hinged at its lower end in support brackets at the front of the superstructure. A fabricated steel container carriage projects horizontally from the mast and is raised by means of the hoist rope which passes over pulleys on the cross piece of the T-shaped mast and is attached centrally to the carriage or frame.

Four steel rollers on the carriage run in the main vertical channel of the mast which acts as a restraining guide-way and permits a smooth hoisting and lowering action. Tilting the mast a few degrees so that the load rests against a pad has eliminated swinging and prevents damage to the container. Hydraulically operated telescopic backstops prevent the mast being tilted more than 7½ deg. beyond the vertical position.

A feature which allows the crane to work in a narrow aisle is its short tail radius and ability of the tail to pass over the empty semi-trailer when slewing. The result is valuable saving in aisle width and it also means that the crane can slew before the trailer is driven away.

Motive Power

The crane is powered by diesel-electric transmission. This comprises a diesel power unit directly coupled to a variable voltage generator which supplies current to the separate motors of the hoist, derrick, slew and travel units. Maximum lifting capacity, which is based on two-thirds of the tipping load, is 12½ long tons at a radius of 11 ft. 3 in. at which the lifting mast is in the vertical position required for normal operation.

The enclosed driver's cab is at the front of the revolving superstructure and gives an unrestricted view of the working area. All crane motions are operated from this cab and the layout of controls is carefully arranged to give swift and effortless operation. A lever for each motion is incorporated in a console in front of the driver and to operate any motion he selects the appropriate switch and moves it up or down, depending upon the direction required. Speed of motion is thereafter controlled by use of the diesel engine accelerator. The electrical control contactors are housed in a fabricated steel housing situated in an accessible position at the base of the superstructure.

The chassis is specially designed for crane duties and fabricated from steel sections and plates. Chassis travelling is powered by a 34-h.p. electric motor via a gearbox and rear axle differential. The front axle is a steel beam with the stub axles swivelling on case-hardened nickel steel king-pins carried in bronze bushes; 14.00—20 pneumatic tyres are fitted, with twins at both front and rear.

To ensure completely safe operation several devices are incorporated in the design. An automatic safe load indicator weighs the load and gives the operator audible and visual warning signals when attempts are made to lift an unsafe load and halts the motion if the warnings are ignored. Electro-mechanical brakes fitted to the hoist, derrick and slew units are automatically applied if there is a break in the current, either accidental or intentional; automatically self-resetting limit switches prevent hoisting and tilting beyond limit. Foot operated air brakes act on all wheels and for parking a mechanical hand brake is used. This type of crane has been installed by A.C.C.S. at Ardrossan in Scotland and at Larne in Northern Ireland and has substantially increased the tempo at both places. The manufacturer of these units is Steels Engineering Products, Limited, of Sunderland.

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WESTERN REGION PLAN

C.T.C. on Central Wales Line

A SCHEME has been approved by the British Transport Commission at an approximate cost of £676,000 for the introduction of centralised traffic control on the Central Wales Line between Craven Arms and Llandovery (exclusive), now part of the Western Region; it is anticipated the work will be completed in approximately three years' time. Under the proposal some 60 miles of single-line track, with long and short crossing loops at suitable intervals, will be continuously track-circuited and provided with colour-light signals. These will be under the control of one signalbox at Llandrindod Wells, thus enabling 18 existing signalboxes to be closed, with consequent economies in staff.

Sidings on the route will be locally worked by ground frame (electrically released by the central signalbox operator), all running moves being power controlled from the central signalbox. Lifting barriers are to be installed at certain level crossings. The present double-line block and single-line token working will be abolished. A considerable amount of permanent way will be recovered as a result of converting sections of double line to single line.

The existing semaphore signalling on the route is almost life expired and considerable expenditure on renewals would be necessary in any case, so the opportunity is to be taken of introducing modern methods and equipment as well as increasing the line capacity The latter will enable many more freight trains originating in West Wales to be worked over the line to and from the Midlands and North of England. This will give much needed relief to the remaining routes for traffic to and from South Wales, which it is anticipated will be taxed to the utmost by additional traffic from industrial developments such as, for example, Steel Company of Wales at Port Talbot (Margam), Richard Thomas and Baldwins, Llanwern (Spencer Works) and the National Coal Board at Cynheidre Colliery, north of Llanelly.

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The new coat of arms devised for the Ulster Transport Authority (Editorial reference, page 1)

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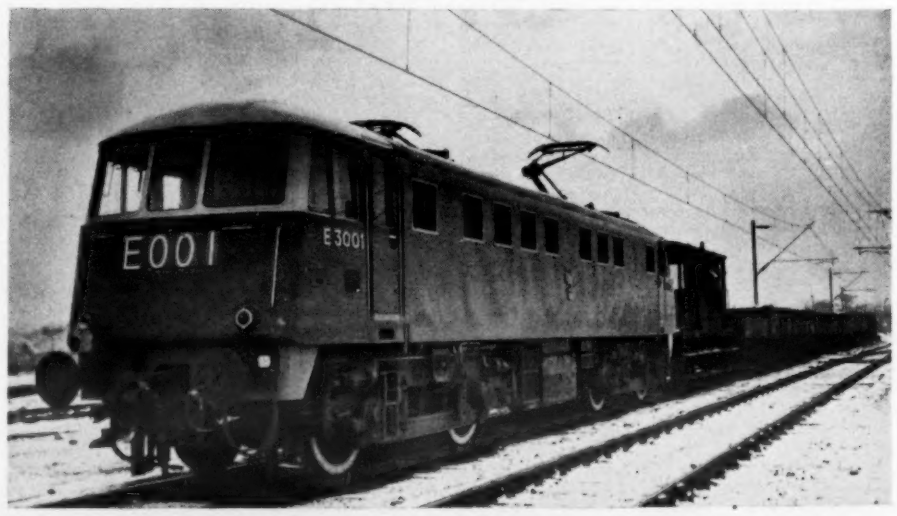

The first A.E.I. 25-kV a.c. locomotive for British Railways now in use for training drivers at Mauldeth Road on the Manchester—Crewe electrification. A second locomotive has been delivered and is also being used for training

FIFTY YEARS OF AIRCRAFT PRODUCTION

Golden Jubilee of Bristol Aeroplane Company

ON February 19, 1960, the Bristol Aeroplane Co., Limited, completes its 50th year in aviation. When it began building aircraft in 1910, it was little more than six years since the Wright Brothers' first flight at Kittyhawk. It can thus be said that Bristol's first half-century of existence therefore covers almost the entire span of powered flight. It could not be pretended for one moment that these years were ones of entirely unhindered progress. Violent wartime expansions were followed by difficult readjustments to reduced peacetime demands.

The undertaking set up in business as the British and Colonial Aeroplane Co., Limited, and its beginnings were modest, as befitted an organisation with a capital of £25,000. It occupied Filton House and some tramsheds on a two-acre site at Filton on the northern outskirts of Bristol. Its

Sir George White, Bart., founder of the British and Colonial Aeroplane Co., Limited

Bristol Boxkite being prepared for flight during Army manoeuvres in September, 1910

The Bristol Britannia makes its first flight in August, 1952

founder, Sir George White, Bart., was a successful Bristol stockbroker and financier and indeed his family, which was closely concerned in the new venture, was already very much involved in transport affairs, albeit on the surface. Through the Imperial Tramways group it had been among the pioneers of electric traction in Britain and the Bristol Tramways and Carriage Co., Limited, which was associated with the group, was already operating and manufacturing motor buses and possessed a substantial fleet of taxicabs as well as its trams. Sir George it should be recorded was one of the few eminent business men of his time to recognise the commercial and military potentialities of aviation.

Early Production

From the beginning the company strove to operate on sound commercial lines and rapidly took a leading position among aircraft manufacturers. The first Bristol aircraft, the Boxkite biplane, was in production only a few months after the company's formation. A Boxkite had the distinction of making the first military flight in history when, in September, 1910, it was used in a reconnaissance role in British Army manoeuvres on Salisbury Plain. Within a matter of months the company was planning for expansion and mounting its first overseas sales drives. Sales missions were dispatched to Australia, India and other countries with good results, and Bristol aircraft were sold to Russia, Sweden, Spain, France, Italy, Turkey, Rumania and Bulgaria.

In those early years the training of pilots was one of the company's major activities. At its flying schools at Larkhill and Brooklands, hundreds of pilots, including some of aviation's future great names, learned the rudiments of their craft. It is a measure of predominance in this field that 80 per cent of British pilots available for service when war broke out in 1914 were Bristol-trained. The war of 1914-18 brought the first of the drastic accelerations of production to which the British aviation industry machine has been subjected. The first Bristol type to enter war production was the single-seat Scout, designed by Captain F. S. Barnwell. In 1916 Barnwell designed the famous Bristol Fighter F2B, the first true two-seat fighter, which was one of the outstandingly successful Allied aircraft of the later war years. Over 4,700 Fighters were built, some of them by Bristol Tramways and by outside firms participating in the first shadow production scheme.

Other Bristol wartime designs included the M1C high-wing monoplane fighter and the Braemar four-engined triplane bomber. The M1C saw service in the Middle East and, operating with the Chilean Air Force, made pioneer flights over the Andes. From the Braemar, which did not go into production because of the ending of hostilities, was developed the Pullman, the first fully enclosed air liner to be built.

After the 1914-18 War

The company adopted its present title at the end of 1919 and in the following year, after acquiring the manufacturing rights in the Cosmos radial engines, Bristol formed an aero-engine department. Cosmos was an offshoot of Brazil Straker which company represented in its turn a merging of Brazil and Holborrow and Straker Squire. With the engine market flooded by war surplus units, this appeared an almost recklessly bold decision but perhaps no decision in the company's history was more fully justified by subsequent events. Under the technical leadership of Mr. (later Sir) Roy Fedden who was its chief engineer from 1920 to 1942, the new department type-tested its first engine, the air-cooled, nine-cylinder radial Jupiter, within a year of its formation. This was an auspicious début, and the Jupiter went on to establish remarkable standards of engineering efficiency, workmanship and reliability. Jupiters powered many types of aircraft and at one time were being manufactured under licence by 16 different countries. Next came the supercharged Mercury and Pegasus types, and engines in the latter series were used in establishing no fewer than four new world altitude records.

In contrast to the engine department, activity in the aircraft shops was for most of the twenties at a reduced level. Research and development work continued, but few military contracts were being placed by the Government, and civil aviation made slow headway. Full-scale production was not resumed until 1929 when the all-steel Bristol Bulldog was selected as the standard day-and-night fighter for the Royal Air Force. This machine remained in production until 1934 and was also sold overseas in substantial numbers. In the early thirties a design was produced for a fast twin-engined transport monoplane in which advanced use was made of stressed-skin construction. This aroused the interest of the late Lord Rothermere who agreed to sponsor the building of a development, known as the *Britain First*.

Seen at Farnborough in 1952 are the twin-rotor Bristol 173 and the smaller 171 helicopters

One of the Mark 32 versions of the Bristol 170 operated by Silver City Airways seen in that operator's new livery

Revival of Demand

The call for new equipment in quantity in 1935 precipitated the death of the biplane and the emergence of a new race of aircraft—clean, efficient monoplanes with cantilever wings, metal semi-monocoque fuselages and retractable undercarriages. Bristol was well placed to serve these requirements—both in the airframe and engine fields. From the Type 142 was soon to be evolved the Blenheim design and its equally famous successors. The Type 130, prototype of the Bombay transport, was also well advanced.

Research into the sleeve-valve engine, begun as far back as 1926, had also come to fruition with the Perseus, followed by the Taurus, Hercules and Centaurus. By 1936, the company was faced with aircraft and engine production on an unprecedented scale. This problem was overcome by the Government shadow production scheme using car factories, and engines chosen for manufacture under the scheme included the Mercury, Pegasus, Perseus, Hercules and Centaurus.

Postwar Projects

In all, well over 14,000 Bristol aircraft and more than 100,000 Bristol engines—over half of them Hercules—were produced during the 1939-45 war and from the 1935 payroll of 5,500, the numbers had swollen to a peak of 52,000 employed in something like 150 premises up and down the country. So in 1945, with about half this number still employed, the Bristol Aeroplane Company was again faced with the prospect of readjusting from war to peace. This problem was tackled by a simultaneous attack on a variety of advanced projects. To begin with, there was the Brabazon, the world's largest landplane, incorporating a design philosophy which was to influence profoundly the techniques of aircraft construction throughout the world. There was also the private venture, Type 170 Freighter, one of the most successful postwar British aircraft, more than 200 being built. There was the formation of the helicopter department which produced the Type 171 Sycamore, the first British helicopter to gain a certificate of airworthiness. This was followed by even more advanced designs such as the twin-engine tandem-rotor Type 173 helicopter, forerunner of the Type 192 military machine.

On the engine side, preliminary work on gas turbines had already been started before the end of the war. The initial venture in this field, the Theseus, became the first turboprop engine to pass an official type test and the first to enter regular operational service. Its successor, the Proteus, powerplant of the Britannia, has become one of the most reliable engines of its type in civil and military operation. It has also been successfully adapted as the power unit for high-performance sea-going craft and as the prime mover of advanced types of electrical generating equipment. In the early postwar years, diversification had taken the company into fields other than aviation—first, into the production of lightweight, prefabricated buildings; this activity ceased in 1955 by which time the acute shortages of conventional building materials had been made good; secondly, into the manufacture of the Bristol cars.

The Britannia

The most important single Bristol project in the postwar era has been the Britannia air liner. First flown in August, 1952, this aircraft, still today the largest and fastest turboprop air liner in international service, has set new standards of reliability, safety and passenger comfort. So far 80 Britannias have been sold, and are in service with six major airlines and with R.A.F. Transport Command. Britannias are currently covering well over 3 million miles a month on revenue service.

As a result of the postwar growth in business, a major reorganisation took effect in 1956. The manufacturing and sales activities of the aircraft, aero-engines and car divisions were reconstituted in three subsidiary companies, Bristol Aircraft, Limited, Bristol Aero-Engines, Limited, and Bristol Cars, Limited. The Bristol Aeroplane Co., Limited, remained as the holding company. In view of its increasing international commitments, Bristol has, during the past ten years, set up subsidiary companies in Canada, Australia, New Zealand, Sweden, Mexico and Cuba.

An ever-increasing share of the available resources has in recent years been devoted to guided weapons development and there is in production a range of aeronautical and civil plastics products, including fuel drop tanks, radomes, car bodies and racing dinghy hulls. Just as the Theseus and the Proteus pioneered the free turbine, so the high-thrust Olympus, the company's first pure jet engine, introduced another Bristol concept, the twin-spool principle. Olympus-powered aircraft have twice broken the world's altitude record. The second Bristol venture in the turbojet field was the lightweight medium-thrust Orpheus which first ran in 1955 with an initial thrust of 3,285 lb. Development has continued rapidly, and the latest version has a thrust of over 8,000 lb. (with reheat).

Grouping on a Large Scale

In conformity with the trend towards larger groupings within the industry, two great names in British aviation, Bristol Aero-Engines, Limited, and Armstrong Siddeley Motors, Limited, united in April, 1959, to form Bristol Siddeley Engines, Limited. This new concern, one of the largest aero-engine manufacturing units in the world, is jointly owned by the Bristol Aeroplane Co., Limited, and Hawker Siddeley Group, Limited. Another major development occurred in January of this year when Bristol, Vickers, Limited and English Electric, Limited, announced that they had decided to amalgamate their aircraft and guided weapon interests in a single new company. Henceforth Bristol Aircraft, Limited, will be, with Vickers-Armstrongs (Aircraft), Limited, and English Electric Aviation, Limited, a wholly owned subsidiary of the new company but will retain its name and identity. Again, this new consortium must rank among the world's largest aircraft and missile manufacturing units, and the combination of the design, research and production facilities and experience of Vickers, English Electric and Bristol will place it in a strong position to confront future international competition.

Skefko Golden Jubilee

HISTORICAL REVIEW OF FIRST 50 YEARS

MARKING the fiftieth anniversary of its formation in Luton on February 7, 1910, the Skefko Ball Bearing Co., Limited, has published a special edition of the company's house magazine, the *Inner Ring*, which gives a brief, but nonetheless engaging, history of the company's activities from 1910 to the present.

In a message broadcast to over 5,000 employees at the Luton and Sundon factories on February 8, the firm's managing director, Mr. C. U. Magnusson, referred to the excellent labour relations that had always existed in the company and paid tribute to the loyalty and co-operation that had played such an important part in the company's development. It was significant, he said, that nearly 400 of his audience had been with Skefko for more than a quarter of a century and almost 2,000 had already seen more than a decade of service. Mr. Magnusson announced that to mark the jubilee the board proposed to set aside for the benefit of employees—to augment sickness benefit, hardship grants and long-service awards—more than £100,000 and that factories and offices would be closed for an extra day on the Friday preceding the work's holiday without loss of pay.

Origin of SKF

Inner Ring recalls that three years before the formation of the British company, Sven Wingquist, a maintenance engineer in a textile factory in Gothenburg, Sweden, had designed a revolutionary self-aligning ball bearing that would accommodate shaft misalignment. Backed by some prominent Swedish businessmen, a Swedish company was formed to manufacture the new type of bearing. The company's title was Aktiebolaget Svenska Kullagerfabriken and it was from the initial letters that the trade mark SKF was taken. Despite difficulties, the new company began to prosper and encouraged by a steady demand from England for its products, already acquiring a reputation for quality, a selling agency was established in London.

On February 7, 1910, the Skefko Ball Bearing Company was incorporated, with offices in Carlton House, Lower Regent Street, London, under Mr. Tinsley Waterhouse as managing director, and in August the same year the SKF board, after rejecting a site in Coventry because it provided no scope for expansion (admirable foresight), decided to build a new factory in Leagrave Road, Luton.

A Start and Early Expansion

The factory opened in 1911, with 150 employees, and its first bearing was produced in June of that year, output soon rising to 150 bearings a day. Acquisition of additional land for future expansion started as early as 1912, the same year as a Sheffield tramcar was fitted experimentally with SKF bearings, and the first extension of the factory necessitated by increasing demand for bearings was made in 1913, in which year Skefko exhibited at the London Motor Show for the first time.

The story continues with a record of prodigious production feats during two major wars and expansion overseas under the aegis of the parent SKF concern and is highlighted by periodic extensions of production facilities and the change from a private to a British public company in 1936. Among the important extensions was the acquisition, also in 1936, of new land at Sundon, 2½ miles from the Leagrave Road property, on which was built the Skefko "dispersal" bearing factory during the 1939-45 war. With further land purchases, the Sundon site now extends to several hundred acres and the production facilities have been expanded to more than twice the size of Leagrave Road.

Material indications of the company's success are evident in the growth of production floor area from 15,490 sq. ft. in 1911 to the present 1,346,028 sq. ft., from the increase in the labour employed from the original 150 to over 5,000 and from the current issued capital of £6 million compared with an original capital of £6,703. Although material success is not the only criterion by which an enterprise is judged, in general it is won on a lasting basis only by high engineering and commercial integrity; these and attention to employee welfare beyond the generally accepted level are written large in the record of the first 50 years of the Skefko Ball Bearing Co., Limited.

OFFICIAL NOTICES

NORTH WESTERN ROAD CAR COMPANY, LIMITED

CHIEF ENGINEER

THE Chief Engineer of the above Company, Mr. J. E. Hollands, will shortly be leaving for Canada to take up an appointment as Group Engineer with Canadian Motorways, Limited. In consequence, the Company invites applications for the position of Chief Engineer which will then become vacant.

The Company, whose Headquarters are at Charles Street, Stockport, operates some 600 vehicles on stage carriage services in Cheshire, Derbyshire, South-east Lancashire, and Yorkshire, and on express services, excursions and tours and contract work.

Applicants must have had administrative and technical experience at a senior level, in the maintenance of a fleet of public service vehicles and in the control of staff.

Applications, which will be treated in strict confidence, should give full particulars of the applicant's career, with a front sheet showing:

1. Name and address
2. Age
3. Whether single or married, and, in the latter case, the number and ages of any children
4. Education
5. Training
6. Professional or technical qualifications
7. Brief statement of present and previous appointments arranged chronologically
8. Present salary

and should be sent under "Private" cover to the General Manager, North Western Road Car Company, Limited, Charles Street, Stockport, not later than March 3, 1960.

THE NORTHERN GENERAL TRANSPORT COMPANY, LIMITED

TECHNICAL ASSISTANT ENGINEER

THE Northern General Transport Company, Limited, which, with its subsidiaries, operates some 950 buses and coaches on stage carriage and express services, excursions and private hire, also extended tours in the U.K. and on the Continent, invites applications from those suitably qualified for the position of Technical Assistant Engineer.

The salary paid will be in accordance with the qualifications and experience of the successful applicant.

Applications endorsed "Technical Assistant Engineer" will be treated as confidential and should be addressed to the General Manager of the Company at 117 Queen Street, Gateshead, 8, giving full details of qualifications and experience but with a front cover sheet, showing (1) name and address, (2) age, (3) education, (4) training, (5) concise summary of previous appointments arranged in chronological order, (6) date available if appointed, to reach him not later than March 14, 1960.

S.R. DIESEL-ELECTRIC UNITS

(*Continued from page 6*)

control is by a self-lapping diaphragm-operated valve, but for working with fitted stock having either air or vacuum brakes control is by an Oerlikon FV3 automatic air brake valve operating through a distributor valve to give either air or vacuum train brake control. By providing for air brake control haulage of Continental stock using an air train brake or of dead multiple-unit electric stock can be achieved without difficulty.

Both driver's brake valve handles are duplicated on the right-hand side of the cab; a separate valve is provided for the straight air brake, but the automatic brake valve is operated by means of a teleflex control. The air compressor is of Davies and Metcalfe manufacture and is a three-cylinder motor-driven machine with built-in intercooler. Maximum delivery is 30 cu. ft. per minute at 100 lb. per sq. in. Vacuum for the train braking is provided by two Reavell FRU 5¼ in. by 10 in. rotary exhausters. One of these runs for maintaining the vacuum while both are brought into operation at high speed for brake release. Each exhauster is driven by a flange-mounted 4.25-h.p. Crompton Parkinson motor and the sets are resiliently mounted.

Cab interior of S.R. Type 3 diesel-electric locomotive

Engine

The power unit is a Sulzer 8LDA28 pressure-charged eight-cylinder diesel engine of 280 mm. bore and 360 mm. stroke. The continuous rated output is 1,550 b.h.p. at 750 r.p.m. and 85 deg. F. and the one-hour 10 per cent overload test-bed rating is 1,705 b.h.p. at 750 r.p.m. The BMP at the rated output is 151 lb. per sq. in. and the guaranteed specific fuel consumption is .381 lb. per b.h.p.hr. At 50 per cent load and 530 r.p.m. the guaranteed consumption is .368 lb. per b.h.p.hr. Maximum piston speed is 1,770 ft. per minute. Engine starting is by motoring the main generator from the battery. The basic engine design is of the familiar pattern developed some years ago by Sulzer specifically for rail traction work. A number of improvements incorporated on the six- and 12-cylinder versions already in use on British Railways permits lengthy periods between overhauls and facilitates servicing. The power unit is mounted at four points on hard rubber pads anchored by rubber cushioned bolts.

The Sulzer exhaust gas turbo-blower set is mounted on the main generator carcase. It is a twin-entry blower and at normal engine full load the boost pressure is about 14 lb. per sq. in. On the blower inlet is a box carrying four panel-type filters. On the initial locomotives these filter panels are Vokes neoprene bonded hair oil-wetted type filters but provision is made in the design to take impingement-type metal filters. The normal Sulzer engine regulator is fitted; this is controlled by a self-lapping air valve in the master controller and includes a generator field regulator servo motor and flange-mounted load regulator. The generator limiting winding governs starting tractive effort to approximately 24 per cent of the locomotive adhesive weight, but the tractive effort at the lower power notches is limited by the special governor characteristics. Under all circumstances the diesel engine runs at the lowest speed compatible with the output required.

The engine instrument panel is resiliently mounted on the vertical pipe bend of the cooling water system at the free end of the engine, and gauges are fitted showing cooling water pressure, water temperature, lubricating oil pressure and temperature, control air pressure and charging air pressure. At the free end of the engine is incorporated the drive pump unit for the radiator fan—a Serck-Behr hydrostatic swashplate pump. The diesel engines are manufactured by Vickers-Armstrongs (Engineers), Limited, at Barrow while a large number of the Sulzer turbo blowers will be manufactured by de Havilland (Engineers), Limited, at Leavesden.

(*To be continued*)

LETTERS TO THE EDITOR

Future for the Railway Passenger

The Editor is always glad to receive letters from readers on subjects germane to the transport industry, but these should be written as concisely as possible. The opinions expressed therein must not, however, be regarded as having editorial endorsement. Where correspondents desire to use a nom-de-plume it is essential that the Editor should be informed of the name and full address of the writer as indication of good faith.

SIR,—Of course Mr. Andrews is right about the Southern, but so is Mr. Fiennes. The main point is that the S.E. and C.R. and the L.B.S.C.R. have, so far as I remember, no mile post above 99. They are blessed with a wonderful network of inter-related short lines on the Dutch pattern so that frequency and connections are far more important than pure speed, provided one is talking of the area south-east of a line from Reading to Southampton.

There are eight ways *each hour* in which I can get from my home stations (St. Margarets or Syon Lane) to Christ's Hospital, a cross-country journey which might be possible only half a dozen times a day in the industrial north. There are also four further routes—reasonably direct—which can be used about every two hours. In spite of this really excellent service, I sometimes have to use the car for this particular journey as in spite of the winding lanes of Surrey which pass for main roads, I can still do it more than half an hour quicker by road, even if the train is aided by driving to the station.

But in the long hauls to the north and west of London 55 m.p.h. will not do, nor will 60 or 65. Even before M1 and with a small car, one could reach Birmingham from my suburb in 3¾ hours door to door. From home to Snow Hill or New Street takes about 3 hr. 10 min. (when a 2-hr. train is available) and then one has to take a bus to final destination.

One of the greatest time consumers for the Londoner is getting to the terminus from home, and every possibility of stopping business expresses at one outer suburban station should be used. The Southern does it religiously at Woking, Bromley South and East Croydon, but the other regions are very spasmodic in their Watford, Hitchin and High Wycombe and similar calls.

Is Multiple-Unit Traction Best?

Having presented Mr. Andrews with these bouquets, let me ask him two questions: Does he still think it right to concentrate on multiple-unit traction on lines where there is both heavy passenger *and* freight traffic, because if so he will often find his locomotives idle much of the day and his multiple units idle most of the night. This is the case where a large but not overwhelming proportion of the trains run out of an electrified area. Secondly, I wonder why there appears to be such a resistance to making the very worthwhile economy in the slack season, of "integrating" the boat trains with the regular interval services, now that multiple-unit boat trains are an accepted medium. This would have the added advantage of enabling people from the Medway towns and Thanet area to travel direct to Dover Marine, which now they cannot do at all. The small amount of revenue lost by passengers booking local tickets on such trains in order to avoid the boat train fare would be more than offset by the economy of cutting out special boat trains, which could continue to run (with the surcharges) at heavier traffic periods. In this respect the Belgians have long pointed the way where they have put all the Ostend—Brussels boat trains into the regular interval pattern (except for a few high season extra international expresses and the T.E.E. *Saphir*) and they all run on the same timings and stop at Bruges and Ghent. The 72½ miles takes 75 min. including the two stops. They do exactly the same with the international trains to Luxembourg and to Amsterdam. Most of them are multiple-unit and nearly all fit into the even interval pattern.—Yours faithfully,

A RAILWAYMAN.

P.S. I leave to your readers the task of working out just how many routes altogether there are (reasonably direct) between Isleworth and Christ's Hospital. It certainly exceeds 20 at which point I gave up.

Tube

SIR,—Can anything be done to save the word *tube* for its original meaning—a deep-level railway, in shield-driven, lined tunnels? I was astonished to see that even *The Times* used this convenient little word in a headline this week when collectively describing all the London Transport railways. But I was saddened even more to see that you, sir, now do the same. In the "News Summary" of the February 6 issue, you refer to the previous Monday's Underground strike as "a partial cessation of *tube* railway services."

The popular newspapers have been abusing this word for years—indeed its very brevity, which it shares with the often associated word *chaos*, must be a great attraction to the harassed sub-editor—but it is time to sit up when the top people in the journalistic world follow suit.—Yours faithfully,

ALAN A. JACKSON.

71 *Overdale,*
Ashtead, Surrey.

The Great Central Problem

SIR,—Mr. J. P. Bardsley's letter in your issue of February 6 reminds your readers of but one occasion in railway history when a different outcome to negotiations would have made unlikely the birth of the London extension of the Great Central. His version of the event is, however, not entirely correct. Whilst it is true that the L.N.W.R. directors favoured absorption of the M.S. and L. jointly with the Great Northern in 1860, their chairman, Lord Chandos, would have none of it. In consequence Denison of the Great Northern withdrew his support.

There were at least three other occasions when railway history might have taken a different course, as a result of which there would have been no Great Central London extension and no Marylebone station. The first was in 1845, when the shareholders of the Sheffield, Ashton-under-Lyne and Manchester Railway (a predecessor of the M.S. and L.) repudiated its board's proposal to lease their line to the Manchester and Birmingham (a predecessor of the L.N.W.R.) and the Midland.

Another occasion was in 1873, when the M.S. and L. in concert with the Midland, planned to build a joint line from Askern Junction, north of Doncaster, to Rushton, near Kettering, to enable M.S. and L. trains to run into St. Pancras. The Bill for the line was so mutilated in Parliament that it was abandoned. Yet another was in 1877, when the Midland and the Great Northern made a joint take-over bid for the lease of the M.S. and L. Unfortunately, the chairman of the latter, Sir Edward Watkin, the last of the British railway kings, stood out for too stiff a price.—Yours faithfully,

GEORGE DOW.

108 *Widney Manor Road,*
Solihull, Warwickshire.

SOCIAL AND PERSONAL

London Traffic Unit

AS part of his plan for tackling the London traffic problem the Minister of Transport has decided to establish in the Ministry of Transport a new London traffic management unit and has appointed Dr. G. Charlesworth, Ph.D., F.Inst.P., as its head. Dr. Charlesworth, who has specialised in road traffic problems for a number of years, is being seconded to the Ministry from the Road Research Laboratory. The task of the new unit will be, in consultation with the local authorities concerned and the Metropolitan Police, to work out and arrange for the execution of plans for securing the maximum use of London's streets as traffic arteries by the application of modern traffic engineering techniques.

* * *

A 26-year-old British Railways stationmaster has been awarded the George Russell memorial prize by the Institute of Cost and Works Accountants following his success in its 1959 examinations. He is Mr. J. Holroyd, stationmaster at Maryport since December, 1958, who, in competition with 3,087 other candidates, secured first place in the Institute's intermediate examination.

* * *

As already recorded, Mr. W. A. Moens, A.M.Inst.T., sales manager, national sales, in the tyre division of the Dunlop Rubber Co., Limited, has retired after 34 years' service with the company. Mr. Moens joined Dunlop in 1926 after serving in the Royal Navy. Starting as a tyre representative, he was appointed assistant district manager in Belfast in 1930, being transferred a year later to Glasgow, where he held the same appointment for three years. It was in Glasgow that Mr. Moens first made contact with large bus and commercial fleet operators and was closely associated with the growth of mileage contracts. In 1934, Mr. Moens was appointed manager, national sales, with his headquarters in London, then became assistant to the director of national sales at Fort Dunlop. At the outbreak of the 1939-45 war, Mr. Moens rejoined the navy and, as commander of destroyers, saw service in the Mediterranean and North Atlantic, which included escorting Russian convoys. In 1949 he was appointed sales manager, national sales. Mr. Moens was a committee member of the Tyre Manufacturers Conference mileage group.

Mr. W. A. Moens

* * *

There is to be a Nyasaland group and a Bulawayo graduate and student society of the Rhodesia section of the Institute of Transport and, in this country, a Chester graduate and student society.

* * *

Mr. E. H. Baker, M.I.Mech.E., M.Inst.T., M.I.Loco.E., has been appointed assistant chief mechanical and electrical engineer, London Midland Region, B.R., in place of Mr. H. Randle, who has retired.

* * *

Mr. R. S. Odd has been appointed joint managing director of Lansing Bagnall, Limited, from April 1. His present position is director and general manager of Wilmot Breeden, Limited. Mr. J. R. V. Dolphin, the other joint managing director, joined Lansing Bagnall from Harwell, where he was engineer-in-chief of the research group of the United Kingdom Atomic Energy Authority.

Mr. S. C. Bond, president of the T.R.T.A., with Mrs. Bond and their daughter, after receiving his C.B.E. from the Duke of Edinburgh at Buckingham Palace last week

The death is announced of Mr. W. T. Potter, a former president of the N.U.R. He was 68.

* * *

Mr. E. A. Aust, M.Inst.T., Assoc.I.E.E., has been appointed to succeed Mr. W. S. Elford as chief engineer of the Adelaide Municipal Tramways Trust. Mr. Aust was formerly chief engineer of the Calcutta Tramways Co., Limited.

* * *

We regret to record the death of Mr. C. G. Page, M.C., formerly secretary of the London Transport Executive. He was secretary and chief legal adviser, L.P.T.B., from 1937 and he retired in 1950. He was 74 years of age.

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Monsieur M. Werner, of Luxembourg, has become director for transport in the General Directorate, Economy and Power, of the newly reorganised executive of the European Coal and Steel Community.

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Sir Ronald P. Morison, Q.C., has been appointed chairman of the Railway Staff National Tribunal, wherein he succeeds Lord Forster. Sir Ronald is a former member of the Industrial Disputes Tribunal. He is independent chairman of the British Iron and Steel Federation.

The Late Mr. R. Morton Mitchell

WE regret to record the death, at the age of 51, of Mr. R. Morton Mitchell, chief executive officer of the Road Haulage Association and secretary of the National Road Transport Federation. He was appointed to the R.H.A. as chief executive officer and secretary in 1949. A portrait and biography appear on page 9 of this issue.

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Mr. G. A. Richardson, B.Com., M.Sc., has been appointed general secretary of the Railway Association of Canada. He has hitherto been chief of the transportation and public utilities section of the Dominion Bureau of Statistics in Ottawa.

* * *

Mr. J. K. Cumming has been appointed district commercial manager, Edinburgh, Scottish Region, B.R. Mr. Cumming joined the Highland Railway in 1920. In 1952 he became assistant district commercial superintendent, Edinburgh, being redesignated in 1955 assistant district commercial manager. Mr. Cumming has recently been occupying temporarily the position of district commercial manager in Edinburgh.

* * *

Mr. J. B. Y. Hill, at present deputy manager of national sales for the Dunlop tyre division, has been promoted to national sales manager in place of Mr. W. A. Moens, who has just retired. He will be based at Albany Street, London, N.W.1. Mr. Hill first joined the company in 1926 as a technical trainee at Fort Dunlop. The following year he transferred to the sales side and since then has had many appointments in the Dunlop sales organisation both in this country and abroad, including for a time that of assistant export service manager. At the beginning of the 1939-45 war Mr. Hill was mobilised with his A.A. regiment. In 1941, with the rank of major, he was seconded to the R.A.F. and served on the night operations staff of No. 10 Fighter Group. At the end of the war Mr. Hill was awarded the M.B.E.

Mr. J. B. Y. Hill

* * *

Mr. A. H. Pendree, sales director of the Goodyear Tyre and Rubber Co. (Great Britain), Limited, recently received his 30-year service pin from the company's managing director, Mr. M. S. Meyer. Mr. F. Foxley, manager of dealer relations at Wolverhampton head office, recently received his 40-year pin.

* * *

On Wednesday last week Mr. T. G. Gibb, chairman of British Road Services, himself presented a London B.R.S. driver with his award for 38 years' safe driving in the Ro.S.P.A. competition. The award was for 1958 and the recipient, Mr. G. W. Choat, who was formerly a McNamara driver, has now in fact 39 years to his credit. Mr. A. J. Wright, South Eastern divisional manager, presented awards to 44 other drivers in the London area with 20 to 33 years' records. Many of them were ex-McNamara employees now serving with B.R.S. (Contracts), Limited.

Sir Bertram and Lady Waring were also at Buckingham Palace. Sir Bertram, chairman of Joseph Lucas (Industries), had received the knighthood conferred upon him in the New Year Honours List

Mr. J. R. Legg has been appointed district operating superintendent, Glasgow South, Scottish Region, B.R. He joined the L.N.E.R. in 1934 and since 1956 has been freight trains assistant to the chief operating superintendent, Scottish Region.

* * *

As from February 1, Mr. F. G. Mitchell, hitherto commercial manager, has been appointed manager of the Siemens and General Electric Railway Signal Co., Limited, of Wembley, and Mr. H. H. C. Hedges, who has been the accountant for some years, has become assistant secretary.

* * *

Mr. J. E. Hollands, chief engineer of the North Western Road Car Co., Limited, has been appointed group engineer to Canadian Motorways, Limited, whose trucking and household moving activities are spread over the whole of the Canadian continent. His headquarters will be in Toronto. Mr. Hollands was previously rolling stock engineer with the Birmingham and Midland Motor Omnibus Co., Limited, having served an apprenticeship with A.E.C., Limited. Canadian Motorways, Limited, is a B.E.T. company.

CLASSIFIED ADVERTISEMENT

IMPORTANT CONTRACTS

Austrian Viscount Order Confirmed

SIGNATURE on the contract for the purchase of six Viscount V810 series turboprop air liners by A.U.A. (Austrian Airlines) has been announced by Vickers-Armstrongs (Aircraft), Limited. The A.U.A. Viscounts (sub-type V837) will be put into service from April next and will replace the four Viscount 700s which A.U.A. has been operating on charter from Fred Olsen Air-transport of Norway. This contract brings the total number of Viscounts sold to 416—including one V810 executive aircraft sold since the last news release on Viscount purchases was issued.

Ford Plant in Southern Rhodesia?

According to a Barclays Bank D.C.O. report from Salisbury, Southern Rhodesia, the Ford Motor Company is to erect an assembly plant there involving an anticipated investment of over £1½ million. The company is purchasing some 40 acres of industrial land and the plant is expected to produce about 27 vehicles daily when in full production and will be designed for expansion.

Guy Vixens for B.R.S.

British Road Services has placed a £70,000 order with Guy Motors, Limited, for 68 Guy Vixen chassis. As 72 similar vehicles bought six months ago by B.R.S., the new chassis will be fitted with pantechnicon bodies of 1,200 cu. ft. capacity and will go into service with Pickfords for furniture removal. More than 1,000 Guy vehicles have been bought by B.R.S. since 1951.

Oil Contracts in Australia

The biggest buyer of ships' bunkers in Australia, the Australian National Line, has signed a contract with BP for the exclusive supply of bunkers to their ships. The annual tonnage involved is estimated at 100,000 tons of marine fuel, 25,000 tons of diesel oil and 7,000 tons of gas oil. BP Australia has also gained a two-year contract to supply the bunker requirements of Broken Hill Proprietary at all Australian ports except Port Kembla.

South Wales Docks Contracts

The British Transport Commission (South Wales Docks) has placed the following contracts:

Davies, Middleton and Davies, Limited, for construction of railway bridge at Newport Docks.

Richard Dunston, Limited, for a new suction dredger for Port Talbot Docks.

The Demolition and Construction Co., Limited, for reconstruction of Phoenix Wharf and repairs to dock walls at King's Dock, Swansea.

The Fairfield Shipbuilding and Engineering Co., Limited, for superstructure of new transit shed at North Dock, Newport.

A.E.I. Equipment for Russia

The control gear division at Rugby of Associated Electrical Industries, Limited, is handling orders placed by Courtaulds, Limited, for the three latest synthetic-fibre plants being supplied to Russia. The equipment involved is for an acetate plant for the production of rayon, an acrylic fibre plant for the manufacture of Courtelle and a tyre-cord plant —the largest of the three, which includes individual motors up to 1,800 h.p. and 576 motors totalling 13,662 h.p.

Taylor Woodrow Builds for Ford Canada

Taylor Woodrow (Canada), Limited, has been awarded a $5 million contract to build a new head office near Toronto for the Canadian Ford Company. The seven-storey building, with a total floor area of over 180,000 sq. ft., will have features including a series of external vertical aluminium fins to give a grid effect and a sawtooth design of alternate porcelain panels and glass on the west elevation. The building has been designed by Messrs. Allward and Gouinlock, architects, of Toronto.

More Gardner-engined Daimlers for Kowloon

A contract for the purchase of a further 40 Daimler double-deck buses has been awarded by the Kowloon Motor Bus Co. (1933), Limited, through Dodwell and Co., Limited, representing Transport Vehicles (Daimler), Limited, and Norris, Henty and Gardners, Limited. The chassis will be powered by Gardner five-cylinder 5LW diesel engines; they make a total of 110 Daimler-5LW Gardner double-deckers to be purchased by the Kowloon operator during the past 12 months. Over 640 Gardner-engined passenger vehicles have now been dispatched for operation in Hong Kong and Kowloon.

B.P. Purchases in 1959

During 1959, B.P. Trading, Limited (British Petroleum Company's principal trading subsidiary) placed orders for materials, equipment and services to the value of nearly £12,200,000. Of this total, orders worth £11,100,000 were placed in the United Kingdom, nearly 50 per cent being for export. In addition, refineries and other main subsidiaries of B.P. in the United Kingdom placed during the year orders valued at almost £4 million to cover their local requirements. Shipment of materials to overseas destinations by sea and air covered approximately 26,000 consignments amounting to more than 106,000 tons, at a freight cost of about £940,000.

A Dove for Leyland Motors

An important newcomer to the growing number of business houses employing their own aircraft is Leyland Motors, Limited, which recently placed an order for a Dove aircraft (de Havilland Gipsy Queen 70 geared engines driving de Havilland propellers), furnished for executive travel. The aircraft, which is due for delivery early in 1960, will be equipped to carry six passengers. It will be used principally by directors and senior executives who, in 1959, flew more than 1½ million miles by airlines maintaining contact with world markets. The Dove will be based at Samlesbury airfield, some eight miles from Leyland. It will be flown by the company's own pilot, but will be maintained and serviced by de Havilland.

B.U.T.-Engined Stock for London

New Derby-built multiple-unit train sets have arrived at Cricklewood diesel depot, London Midland Region, for service over London suburban routes, including the St. Pancras—Bedford route. Each train comprises two driving motor cars and two intermediate trailer cars, the motor cars being equipped with power, control and transmission equipment supplied by British United Traction, Limited. Two 230-b.h.p. six-cylinder B.U.T. horizontal diesels driving through SE4 gearboxes and RF28 reversing final drives are installed in each power car. Further sets of this type are to be delivered to Cricklewood where, for some time, two-car sets with B.U.T. 150-b.h.p. engines and allied equipment have been based and working the Kentish Town—Barking service.

SHIPPING AND SHIPBUILDING

World Marketing of Dracones

THE Dracone, a British development first evolved by a group of Cambridge scientists four years ago, is to be launched commercially throughout the world by a new company, Dracone Operations, Limited. The new company is backed mainly by associates of Hambros Bank, and of H. Clarkson and Company, ship brokers. Dracone Operations is also associated with Dracone Developments, Limited, an off-shoot of the Government-backed National Research Development Corporation, which first sponsored the development of this flexible sea-going container.

Autonomous Port Authority

MALACCA is to have a self-supporting autonomous port authority soon. Draft legislation is being prepared as a first step towards setting up the authority. The Malacca river mouth is to be dredged to its pre-war level.

Joint Cunard-Anchor Service

THIS week, the Anchor Line, Limited, and the Cunard Steam-Ship Co., Limited, commenced to operate jointly a service between the United Kingdom and the United States of America. Fast vessels will sail fortnightly from London calling at Le Havre and Glasgow for New York, Baltimore and Hampton Roads, returning from New York direct to London.

Better Shallow Sounding

A NEW type of echo-sounder is being fitted to vessels of the Shell tanker fleet. It will measure shallow clearances of water beneath the keel of a ship to within two feet. Kelvin and Hughes, Limited, in conjunction with Shell Tankers, Limited, has developed a model which is being fitted to new 18,000 d.w.t. tankers and the Marconi Marine Co., Limited, has designed a comparable unit, one of which has been fitted to a 32,000 d.w.t. tanker.

Largest Car Cargo to Pacific

THE newly built *Cape Sable* (10,660 gross tons) owned by the Lyle Shipping Co., Limited, Glasgow, has sailed on her maiden voyage for the U.S.A. with some 1,082 British cars of eight different makes—Austin, Morris, Jaguar, Vauxhall, Ford, Rootes Group, Standard and Rover. This is the biggest load of unboxed British cars to be shipped to the Pacific coast and has been made possible by special fittings of three extra car decks in her lower holds and one in tween decks so that the vehicles can be shipped in six tiers.

Impregnated Veneer Lifeboat

UNDERGOING weathering trials aboard the *Clan Chattan* of Clan Line Steamers is a new resin-impregnated veneer lifeboat developed by Fairey Marine, Limited. Without any type of covering it will hang from davits during a three months' voyage to Aden, Colombo, Madras, Calcutta and home again to Birkenhead. This gruelling test will expose the new lifeboat to climates ranging from winter in the Atlantic to the tropical conditions of the Red Sea. The 46-seat lifeboat evolved by the Fairey process consists of hot-moulding several layers of wood veneers and impregnation with synthetic resins to produce a light, strong, water-and-climate-proof hull.

Lobito Route More Competitive

BRITISH and Continental shippers are said to have flooded shipping agencies with inquiries about using the Lobito route to Rhodesia and the Belgian Congo since the Lobito outward shipping conference cut tariffs to this West African port. The conference decision to abolish primage on rates to Lobito now makes shipment of cargoes from the U.K. and the Continent to the Copperbelt not only quicker but cheaper than by other routes, it is claimed. Therefore, the Lobito route to the Copperbelt is now in direct competition with the east coast routes via Beira and Lourenço Marques. It takes a cargo between 35 and 45 days from the U.K. to reach Ndola in Rhodesia via Lobito and the Benguela Railway against 49-59 days via Lourenço Marques and 59-66 days via Beira.

Underwriters Report

PRESENT day cargo rates, although perhaps slightly firmer than in recent years, are still unrealistic and only by careful selection can underwriters avoid a loss on their accounts, states the annual report of the Liverpool Underwriters Association. Unsatisfactory port conditions, deteriorating ship fire experience and the heavy incidence of theft and pilferage are all factors which tend to aggravate an already unfavourable position. The vexed problem of consignees using quays and warehouses as storage premises still exists. Delays in customs clearance at some ports also persist and very often result in serious congestion of cargo. These delays are not always the fault of the authorities and it is interesting to note that one port authority, in a serious endeavour to improve matters, has established new regulations which provide for a reduction in Customs storage rates for those consignees who clear their goods within specified periods. The delay in removing goods from the quays is one of the root causes of pilferage. Lack of supervision, rough handling and insecure warehousing are also contributory factors.

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FINANCIAL RESULTS

NOTES on the trading results, dividends and financial provisions of companies associated with the transport industry are contained in this feature, together with details of share issues, acquisitions and company formations or reorganisations.

Isle of Man Steam Packet

In addition to raising the dividend to 6 per cent from 5½ per cent, the directors of Isle of Man Steam Packet Co., Limited, are recommending a bonus of 1 per cent (nil). Total income for 1959 advanced to £1,334,128 from £1,233,238 for 1958, while net profits after tax were £106,103 (£82,648).

British Oxygen

Gross net profit after tax and depreciation of the British Oxygen Co., Limited, was £4,521,390 (£3,334,062) and dividend for the year is 14 per cent (excluding a special interim of 2 per cent paid with the final dividend last year). This profit improvement was due principally to a widespread expansion and improvement in operations overseas.

Birmingham Railway Carriage: Charles Roberts

It was announced jointly by the Birmingham Railway Carriage and Wagon Co., Limited, and Charles Roberts and Co., Limited, that negotiations are taking place for a merger of the two companies. It was recently stated that the Birmingham company was seeking means of diversifying its output or improving prospects in other ways.

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